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March 6, 2019

VIA HAND DELIVERY

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

REDACTED – FOR PUBLIC INSPECTION

Re: Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations; WT Docket No. 18-197

Dear Ms. Dortch:

Pursuant to Section 1.1206(b) of the Commission's Rules, 47 C.F.R. § 1.1206(b), notice is hereby provided of a written *ex parte* presentation in the above-referenced docket. By this filing, T-Mobile US, Inc. ("T-Mobile") hereby supplements the record with additional information regarding its planned in-home broadband product. In the attached document, T-Mobile provides a more detailed description of New T-Mobile's proposed in-home broadband service called "New T-Mobile Home Internet", including an update on network and business planning for the offering that has occurred since the Joint Applications were filed nearly eight months ago. The filing is supported by several declarations from T-Mobile business leads. Also attached is a report by Mark Israel, Michael Katz, and Bryan Keating (IKK) accounting for the effects of in-home broadband traffic on their analysis of New T-Mobile's proposed mobile broadband services.

The record in this proceeding, as supplemented by this filing, shows that the merger will unleash a disruptive and effective competitor upon an in-home broadband industry typified today by extreme and growing consumer dissatisfaction. The result will be profound and immediate for competition and will help bridge the digital divide. The New T-Mobile Home Internet service will connect millions of rural and low-income households to high speed Internet access by delivering quality service at an aggressive price point, including to areas where no broadband service exists today. These pro-competitive and pro-consumer in-home broadband benefits are clearly merger-specific, verifiable, and compelling considerations to inform the Commission's overall review of the merger's effects on competition and the public interest.



Ms. Marlene H. Dortch
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This filing contains Confidential Information and information that is “Highly Confidential” pursuant to the Protective Order filed in WT Docket No. 18-197. Accordingly, pursuant to the procedures set forth in the Protective Order, a copy of the filing is being provided to the Secretary’s Office. Two copies of the Highly Confidential Filing are being delivered to Kathy Harris, Wireless Telecommunications Bureau. A copy of the Redacted Highly Confidential Filing is being filed electronically through the Commission’s Electronic Comment Filing System.

Please direct any questions regarding the foregoing to the undersigned.

Respectfully submitted,

DLA Piper LLP (US)

/s/ Nancy Victory

Nancy Victory
Partner

cc: David Lawrence
Kathy Harris
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NEW T-MOBILE IN-HOME BROADBAND

I. INTRODUCTION AND SUMMARY

From the inception of the T-Mobile and Sprint merger, the in-home broadband opportunity has been an important part of the New T-Mobile business plan.¹ In this merger, the unique combination of spectrum and sites held by T-Mobile and Sprint will create a broad and deep network with fiber-like speeds and massive capacity that benefits consumers of both Commercial Mobile Radio Services (“mobile wireless”) and Fixed Broadband Services (“in-home broadband”). New T-Mobile will not only raise the performance bar and enhance competition for mobile wireless services, but also enter into and disrupt in-home broadband based on the same network capabilities created by combining the complementary spectrum of the two companies. As in the mobile wireless context, New T-Mobile’s in-home service will create direct benefits for all in-home broadband consumers, forcing incumbent broadband providers to lower prices and improve services to respond to an aggressive new broadband competitor. The benefits to consumers of both of these services are inextricably linked because they are derived from the improved wireless network made possible by the transaction. Consequently, the Commission must consider the merger’s overall effects on competition and the public interest and not just consider its constituent parts in isolation from each other.²

This supplemental filing details the merger-specific benefits for competition and consumers for one of America’s least competitive and most critical gateways for the digital era—in-home broadband. The most recent industry data show that today 28.9 percent of U.S. households, and 61.1 percent of rural households³ still have no in-home broadband service or

¹ *Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of the Licenses and Authorizations*, WT Docket No. 18-197, Description of Transaction, Public Interest Statement, and Related Demonstrations at 58-69 (filed June 18, 2018) (“Public Interest Statement”).

² See, e.g., *Applications of AT&T Inc. and DIRECTV For Consent to Assign or Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, 30 FCC Rcd 9131, 9132, 9175, 9179, ¶¶4, 111, 127 (2015); *Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licensees*, Memorandum Opinion and Order, 26 FCC Rcd 4238, 4330-33, ¶¶226-31 (2011).

³ See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2018 Broadband Deployment Report, 33 FCC Rcd 1660, 1681-83, 1714-1715, ¶¶40, 52, tbl. 2b (2018) (“Broadband Deployment Report”) (noting use of census data regarding populations deemed rural, i.e., containing fewer than 100 people per square mile); *Bridging the Digital Divide for Low-Income Consumers*, Fourth Report and Order, 32 FCC Rcd 10475, 10479, ¶7, n.23 (2017).

only one provider offering in-home broadband.⁴ Under these uncompetitive conditions, consumer satisfaction with in-home broadband providers reached an “an all-time low” in 2018, according to the American Consumer Satisfaction Institute (“ACSI”). ACSI’s 2018 Telecommunications Report found that “[c]ustomers are unhappy with the high price of poor service” and “many households have limited alternatives as more than half of all Americans have only one choice for high speed broadband.”⁵ Furthermore, “[a]ccording to users, most aspects of [in-home broadband service] are getting worse.”⁶

New T-Mobile’s business plan is to become the disruptive “Un-wired” and “Un-cabled” in-home broadband provider. The merger will result in massive increases in capacity, in excess of planned wireless traffic in some areas, and that unused capacity can be used to offer in-home broadband service in those areas without meaningfully degrading mobile wireless service. By leveraging the capacity and assets deployed for New T-Mobile’s mobile wireless services, New T-Mobile’s fixed wireless broadband service can be deployed at nominal or low incremental cost.⁷ As network capacity grows, so too will the number of subscribers, with the business plan showing [REDACTED], and 9.5 million in 2024.

New T-Mobile will use this low cost structure to aggressively capture share by pricing its service at [REDACTED] per month below what in-home broadband providers typically charge today (assuming they provide service in an area at all).⁸ Moreover, the low price comes with high

⁴ “Broadband” being defined as fixed terrestrial service at minimum speeds of 25/3 Mbps, consistent with Commission’s current definition. *See Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, Fourteenth Broadband Deployment Report Notice of Inquiry, GN Docket No. 18-238, FCC 18-119, ¶17, n.46 (Aug. 9, 2018) (*Fourteenth Notice*); *see* Broadband Deployment Report, 33 FCC Rcd at 1681, ¶51, n.148. Also, consistent with the Commission’s most recent evaluation of competition in the fixed terrestrial broadband market, we decline to include satellite service consistent in our analysis. *In the Matter of Communications Marketplace Report et al.*, GN Docket No. 18-231 et al., Report, FCC-18-181, ¶185, n.595 (rel. Dec. 26, 2018) (“Communications Marketplace Report”).

⁵ American Customer Satisfaction Index (“ACSI”), “ACSI Telecommunications Report 2018,” at 8 (2018), <http://marketing.theacsi.org/acton/attachment/5132/f-0060/1/-/-/-/-/ACSI%20Telecommunications%20Report%202018.pdf>.

⁶ *Id.* at 9.

⁷ *See* Public Interest Statement at 55.

⁸ Declaration of G. Michael Sievert, President and Chief Operating Officer, T-Mobile, US, Inc., Appx. A, at ¶2 (“Sievert Decl.”); *see also Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 18-197, Joint Opposition of T-Mobile US, Inc. and Sprint Corporation, Appx. C, G. Michael Sievert, President and Chief Operating Officer, T-Mobile, US, Inc., at ¶¶36-39 (Sept. 17, 2018) (“Sievert Reply Decl.”).

speed broadband, providing average speeds in excess of 100 Mbps to 90 percent of the country by 2024. There will be no contract, no equipment charges, no installation charges, and no surprises.⁹ Notably, all in-home broadband consumers (whether customers of New T-Mobile or not) will benefit from lower prices as their current fixed broadband providers must respond to a less expensive, new entrant offering superior service.

As detailed in attached maps, the Home Internet service will be offered to [REDACTED] “Eligible Households” that represent over half the country’s households by 2024.¹⁰ Of those Eligible Households, [REDACTED] households today have no options for in-home broadband service or no choice of in-home broadband provider.¹¹ New T-Mobile will have the capacity to serve [REDACTED] of those Eligible Households (“Supported Households”) by 2024.¹² New T-Mobile’s business plan (Build 9) is to obtain 9.5 million subscribers by 2024.¹³

With respect to rural areas, approximately [REDACTED], or [REDACTED], of U.S. rural households are Eligible Households for New T-Mobile’s Home Internet service.¹⁴ Of those, [REDACTED] today have no options for in-home broadband service or no choice of in-home broadband provider.¹⁵ As a result of the merger, up to [REDACTED] rural households could be supported by New T-Mobile’s Home Internet service by 2024, including [REDACTED] rural households with no in-home broadband service or choice today.¹⁶ As these facts reflect, the merger will have an enormous impact on closing the digital divide by bringing rural Americans the in-home broadband service they need and want.

The Home Internet service has a low cost structure and good economics. By monetizing available spectrum and leveraging off of other deployed network assets, the in-home service will be profitable on its own. The in-home broadband service also will produce financial benefits for mobile wireless by reducing churn and attracting new customers.¹⁷ In addition, the in-home service will complement and create increased revenue opportunities for New T-Mobile’s video distribution service.

Consumers will save billions of dollars as a result of the introduction of New T-Mobile’s in-home broadband service to replace higher priced and/or poorer quality service from fixed

⁹ See Sievert Decl. at ¶6.

¹⁰ See Declaration of Mark McDiarmid, Senior Vice President of Radio Network Engineering and Development, T-Mobile, US, Inc., Appx. B, at ¶9 (“McDiarmid Decl.”).

¹¹ *Id.* at ¶8.

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ Sievert Decl. at ¶7.

broadband providers. Dr. Harold Furchtgott-Roth has quantified benefits from: (1) customers purchasing New T-Mobile’s in-home wireless broadband offering; (2) new broadband customers taking service; and (3) competitive responses of incumbent fixed broadband providers.¹⁸ The cumulative consumer welfare benefits will be between \$5 billion and \$11 billion in 2024 and annually thereafter.¹⁹ The bottom line is that New T-Mobile’s in-home and mobile wireless services will create competition and choice that will save all in-home broadband consumers significant amounts of money each month.²⁰

The record in this proceeding, as supplemented by this filing, shows that the merger will unleash a disruptive and effective competitor upon an in-home broadband industry typified today by extreme and growing consumer dissatisfaction. The result will be profound and immediate for competition and will help bridge the digital divide. The New T-Mobile Home Internet Service will connect millions of rural and low-income households to high speed Internet access by delivering quality service at an aggressive price point, including to areas where no broadband service exists today. These pro-competitive and pro-consumer in-home broadband benefits are clearly merger-specific, verifiable, and compelling considerations to inform the Commission’s overall review of the merger’s effects on competition and the public interest.

II. NEW T-MOBILE’S UN-WIRED AND UN-CABLED IN-HOME BROADBAND

The New T-Mobile network enabled by the merger will have massive capacity, fiber-like speeds, and lower costs.²¹ As detailed in the Public Interest Statement, New T-Mobile’s in-home broadband service will be offered in geographic areas where the New T-Mobile network has

¹⁸ *Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 18-197, Joint Opposition of T-Mobile US, Inc. and Sprint Corporation, Appx. J, Declaration of Dr. Harold Furchtgott-Roth at 8 (Sept. 17, 2018) (“Furchtgott-Roth Decl.”). Moreover, as identified by Dr. Furchtgott-Roth, billions of dollars in additional consumer benefits are likely to accrue to customers who “cord cut” by dropping their fixed in-home broadband subscription and using mobile broadband services only. The IKK Declaration calculates the merger’s efficiency benefits to mobile broadband consumers, which includes the benefits that accrue to cord-cutters. *See* Analysis of Mark Israel, Michael Katz, and Bryan Keating, Appx. C, at ¶35 (“IKK Analysis”).

¹⁹ *Id.* at 8. These projections track those of Dr. Harold Furchtgott-Roth with respect to three of the four categories of customer benefits identified in his declaration. Furchtgott-Roth Decl. at 2. Dr. Furchtgott-Roth notes that these are conservative estimates of increased consumer surplus that “almost certainly *underestimate* total consumer surplus changes that would also account for quality improvements.”

²⁰ In light of the network coverage and speed analyses described above, an additional economic analysis has been performed by Israel, Katz & Keating (“IKK”) that demonstrates that the offering of the New T-Mobile Home Internet service where capacity exists is consistent with, and does not affect, the IKK merger simulation conclusions concerning the consumer welfare effects for mobile wireless services in 2021 and 2024. IKK Analysis at 3.

²¹ *See* Public Interest Statement at 51, 55.

capacity beyond that required to support mobile wireless customers, including areas in which millions of households have no option or no choice for in-home broadband.²² The service leverages the capacity and assets deployed for New T-Mobile’s mobile wireless services, and thus can be deployed at nominal or no incremental cost. This allows the combined company to offer substantially lower prices to consumers and the ability to plant the Un-carrier flag in in-home broadband.

New T-Mobile will initially launch the Home Internet service using a 4G router (pictured below) operating over T-Mobile’s LTE network.²³ The LTE router will cost approximately [REDACTED], but it will be provided to customers of the Home Internet service at no extra charge. Shortly after the merger, the router will be upgraded to include 2.5 GHz spectrum and 5G compatible hardware.²⁴ The router also is expected to include mesh network capabilities to enable advanced Wi-Fi connections with multiple network nodes to enhance quality as well as phone and video features.²⁵ The 5G router is initially expected to cost approximately [REDACTED], and that cost is expected to decline with volume. As with the LTE router, it will be provided to customers at no extra charge.

²² McDiarmid Decl. at ¶4.

²³ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Declaration of Dave Mayo, Senior Vice
President of 5G and IoT Business Chief, T-Mobile, US, Inc., Appx. D, at ¶¶2-5 (“Mayo Decl.”).

²⁴ Sievert Decl. at ¶4.

²⁵ *Id.*



Fig. 1: Home Internet 4G LTE Router

The Home Internet router will be delivered to the customer for self-installation. The self-install process will be aided by a mobile app to guide the customer in setting up the system and finding the optimal router location in their residence.²⁶ In addition, New T-Mobile’s industry-leading customer care teams will be trained to assist the customer, address any problems, and answer any questions.²⁷ In areas with more limited capacity, New T-Mobile will employ a targeted direct marketing approach.²⁸ In markets with more capacity and broader coverage, New T-Mobile will expand distribution to retail stores with increased local media spend (similar to its mobile wireless services).²⁹

To identify prospective customers, New T-Mobile will have a simple “enter an address” function on its website through which a customer can get qualified in seconds.³⁰ An end-to-end web and app-based service eligibility tool will be developed and launched to enable a seamless eligibility and sign-up process. Frontline representatives will use the tool to check eligibility and find the right fit with a suite of available bundled products. In-home broadband technical expertise will be fully integrated with our award-winning Team of Experts.

An illustration of the process is depicted below:

²⁶ T-Mobile already has experience with such setups as it currently provides its subscribers with booster devices to self-install in their homes. *Id.* at ¶5.

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.* at ¶10.

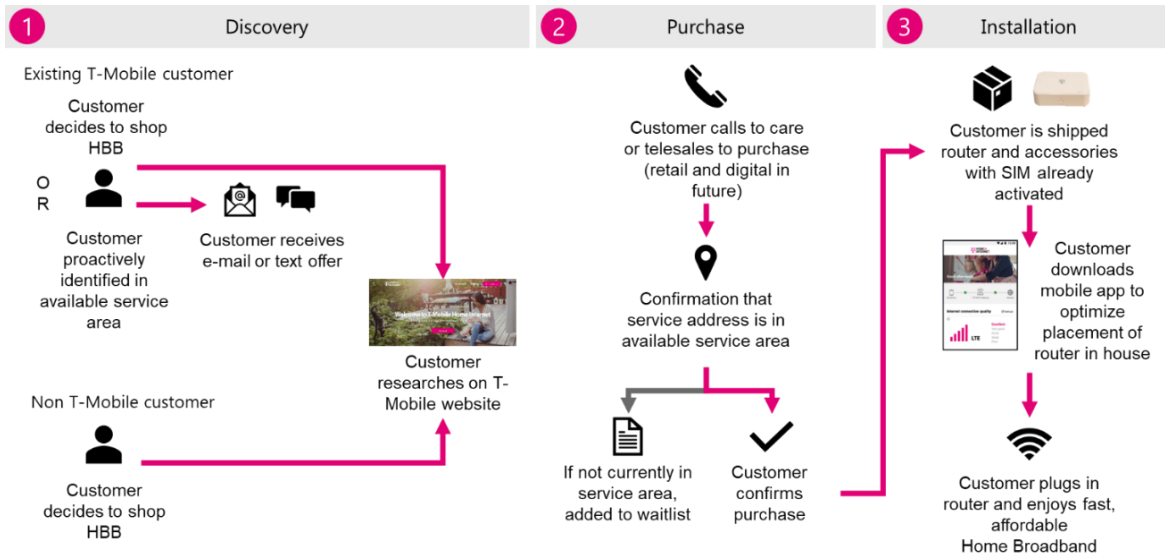


Fig. 2: New T-Mobile Home Internet Customer Onboarding Process

Speeds of the in-home broadband product will track the speeds of the merged company's mobile wireless service. Thus, by full deployment of the New T-Mobile 5G network in 2024, in 90 percent of the country, the customers of the Home Internet service will receive an average download speed in excess of 100 Mbps or higher (with a minimum speed of 25/3 Mbps). Additionally, New T-Mobile will extend its consumer-focused Un-carrier approach to deliver an Un-wired and Un-cabled customer experience:

- A simple monthly price, set [REDACTED] below incumbent provider prices;
- No extra charge for the router;
- No installation charge;
- No contract ("Un-contract"); and
- Customer care from the Magenta Glove Team.³¹

What T-Mobile has done for mobile wireless consumers, New T-Mobile will do for in-home broadband consumers. The combined company will be relentless in removing customer pain points and changing the things people hate about their in-home broadband service.

III. NEW T-MOBILE WILL BRING IN-HOME BROADBAND SERVICE AND CHOICE TO MILLIONS OF AMERICANS WHO HAVE NO SERVICE OR NO CHOICE TODAY, ESPECIALLY IN RURAL AREAS

Millions of American households lack access to reliable in-home broadband service at speeds that enable them to access the Internet resources necessary to fully participate in today's

³¹ *Id.* at ¶6.

rapidly evolving connected digital era. And millions of American households who do have in-home broadband access have few or no competitive options and overpay for slow, poor quality service. Almost one in nineteen—or over 6.6 million American households—have no access to in-home broadband at all.³² These Americans either lack in-home connectivity of any kind or remain bound to connection speeds below 25/3 Mbps. Of these unserved American households, over 83 percent live in rural communities.³³

For those fortunate enough to have access to in-home broadband service, the FCC’s data show that, today, the overwhelming majority of American households are in uncompetitive wired in-home broadband markets that are characterized by monopoly or duopoly conditions.³⁴ Approximately 35.5 million American households (28.9 percent³⁵) have no access or access to only one fixed broadband provider, giving them effectively no competitive choice.³⁶ Again, rural communities suffer most: today, 61.1 percent of rural American households have no competitive choice for in-home broadband service.

These figures become even more discouraging at higher speed tiers. Today, almost 45 percent of American households have one or no choice of providers offering in-home broadband at 100/10 Mbps or above and, in rural areas, that number leaps to a staggering 76 percent of rural American households that are facing either a monopoly provider or no access to broadband services at 100/10 Mbps or above.³⁷

With so many Americans having so few choices, it is unsurprising that the data show a disquieting trend of increasing average subscription prices for in-home broadband services,³⁸

³² Communications Marketplace Report, *supra* note 3 at Appx. C-2.

³³ *See id.* at p. 100, Fig. D-3.

³⁴ *See id.* showing that 72.1 percent of Americans only have access to two or fewer broadband providers.

³⁵ There are a total of approximately 122.8 million households in the country, of which approximately 23.8 million are rural.

³⁶ *Id.*

³⁷ *Id.*

³⁸ For example, Comcast, Charter, and AT&T collectively account for two-thirds of all residential broadband internet subscriptions, and all have raised their broadband-only subscriptions as more subscribers have ‘cut-the-cord’ on bundled TV/internet plans. *See, e.g.*, Leichtman Research Group, Inc., “Broadband Internet in the U.S. 2018” (Dec. 21, 2018) (Indeed, Comcast and Charter alone account for 52.3 percent of subscriber households.); Reinhardt Krause, “Cable TV’s Hail Mary: Hike Broadband Prices Amid Cord-Cutting,” Investor’s Business Daily (Oct. 17, 2017), <https://www.investors.com/news/technology/cable-tvs-hail-mary-hike-broadband-prices-amid-cord-cutting>; Trefis Team, “A Look At Our \$38 Price Estimate For Comcast,” Forbes (Mar 27, 2018), <https://www.forbes.com/sites/greatspeculations/2018/03/27/a-look-at-our-38-price-estimate-for-comcast/#5e9e2567c51e> (estimating the average monthly fees for residential high-speed internet

particularly among the low and mid-speed plans favored by price-sensitive consumers.³⁹ Despite demanding high prices,⁴⁰ U.S. Internet service providers continue to receive dreadful customer satisfaction ratings, trailing nearly every other sector of the economy.⁴¹ A 2018 report from the American Customer Satisfaction Index found that satisfaction among ISP customers reached an “all-time low” of 62 out of 100 in 2018—a 3.1 percent decrease from 2017.⁴² Customers reported that their Internet service is less reliable and more prone to outages, while peak hour performance and overall data transfer speed have decreased.⁴³ Call center customer service, already notoriously poor among ISPs, reached a low score of 59 out of 100—an “F” grade by most academic scales.⁴⁴

Taken as a whole, these figures paint an unsettling portrait of an uncompetitive in-home broadband marketplace. In the absence of competition, in-home broadband incumbents have little to no incentive to provide better or faster service and this lack of competitive incentive has a very real impact on the consumer experiences and wallets of every-day Americans. In short, the in-home broadband market is primed for disruption.

New T-Mobile Home Internet would provide this much needed disruption by creating a new, competitive, high-speed in-home broadband option for millions of American consumers. Not only would New T-Mobile Home Internet bring broadband speeds to Americans without service and those without choice, it would bring speeds in excess of 100 Mbps to approximately half of the U.S.’s geography and nearly 90 percent of its population by 2024. This means that

have increased from \$44.55 on 2015 to \$49.00 in 2018); David Lazarus, “Cable’s answer to cool new streaming services? Soaring internet prices,” LA Times (Aug. 1, 2018), <https://www.latimes.com/business/lazarus/la-fi-lazarus-ridiculous-internet-costs-20180814-story.html>.

³⁹ Bill Callahan & Angela Siefer, “Tier Flattening: AT&T and Verizon Home Customers Pay a High Price for Slow Internet” at 2, National Digital Inclusion Alliance (July 31, 2018) (showing that, after an initial promotional year, AT&T and Verizon have both abandoned cheaper rate tiers for low and mid-speed Internet access to the detriment of low-income customers, and both charge essentially identical monthly prices (\$63-\$65) for home Internet connections at almost any speed up to 100/100 Mbps fiber service).

⁴⁰ See Cable.co.uk, “Worldwide Broadband Price Comparison” (2018), <https://s3-eu-west-1.amazonaws.com/assets.cable.co.uk/broadband-speedtest/worldwide-broadband-price-comparison-2018.xlsx> (ranking the United States with the 119th lowest price out of 197 nations).

⁴¹ ACSI Report, *supra* note 3 at 19; *see also* Consumer Reports, “Internet Providers: Ratings Overview” (2018), <https://www.consumerreports.org/products/internet-providers/ratings-overview>.

⁴² ACSI Report, *supra* note 3 at 9.

⁴³ *Id.* at 9-10.

⁴⁴ *Id.* at 10.

some of the least competitive markets in the country—those with one or no choice of providers offering fixed wireless broadband at 100/10 Mbps or above—will gain new competition.

In the Public Interest Statement and Joint Opposition, the Applicants explained that New T-Mobile’s business plan is to serve 9.5 million households by 2024.⁴⁵ But this figure was just the tip of the iceberg, revealing only a small part of the service’s profile and potential impact. As further detailed in the attached declaration of Mark McDiarmid,⁴⁶ in order to scope the potential customer base of New T-Mobile Home Internet, T-Mobile’s network engineers:

- Identified areas within the 5G network with coverage sufficient to support New T-Mobile’s in-home broadband offering (the “In-Home Broadband Coverage Area”);
- Calculated the areas within the In-Home Broadband Coverage Area where sufficient network capacity existed to offer in-home broadband services (the “In-Home Broadband Eligible Area”);
- Used the network model to determine the number of households in the In-Home Broadband Eligible Area that could be served by New T-Mobile (the “In-Home Broadband Supported Households”); and
- Applied New T-Mobile’s marketing hierarchy⁴⁷ to the In-Home Broadband Supported Households to determine the demographic characteristics of customers New T-Mobile would serve.

The results of this analysis show that by 2024, New T-Mobile will have [REDACTED] Eligible Households by 2024, including [REDACTED] Eligible Households in rural areas.⁴⁸ This represents over half the households in the country and approximately [REDACTED] of the rural households. Of these Eligible Households, [REDACTED] currently have no choice for in-home

⁴⁵ See Public Interest Statement at 60; Joint Opposition at 66.

⁴⁶ See generally McDiarmid Decl. at ¶2.

⁴⁷ New T-Mobile’s marketing hierarchy spreads the available network capacity within each sector of the New T-Mobile 5G network across Census Blocks within the network in the following priority: 1) the analysis allocates subscriber capacity to Census Blocks classified as “rural” where “no choice” exists—“no choice” being defined as areas where there is either no provider of 25/3 broadband or only a single provider of 25/3 broadband, and therefore consumers do not have a choice for in-home broadband services; 2) after having used available capacity for households in rural/no choice Census Blocks, the analysis then allocates remaining subscriber capacity to other Census Blocks classified as “rural”; 3) after having used available capacity in rural Census Blocks, the analysis then allocates any remaining subscriber capacity to non-rural Census Blocks where no choice exists; and 4) if capacity remains after all rural and no choice non-rural Census Blocks, the analysis uses the remaining subscriber capacity for other urban Census Blocks.

⁴⁸ See McDiarmid Decl. at ¶4.

broadband, including [REDACTED] in rural areas.⁴⁹ Eligible Households, in traditional fixed wireline parlance, are the equivalent of “homes passed”, in that they are the unique premises to which an operator has capability to connect in a service area, but that may or may not be connected to the network. In the fixed wireline context, even when an operator does not, or could not serve every household within its service footprint, “homes passed” provides a valuable metric of network costs, provider performance, and potential profitability. A map of New T-Mobile Home Internet’s Eligible Areas is provided in Figure 3 below:

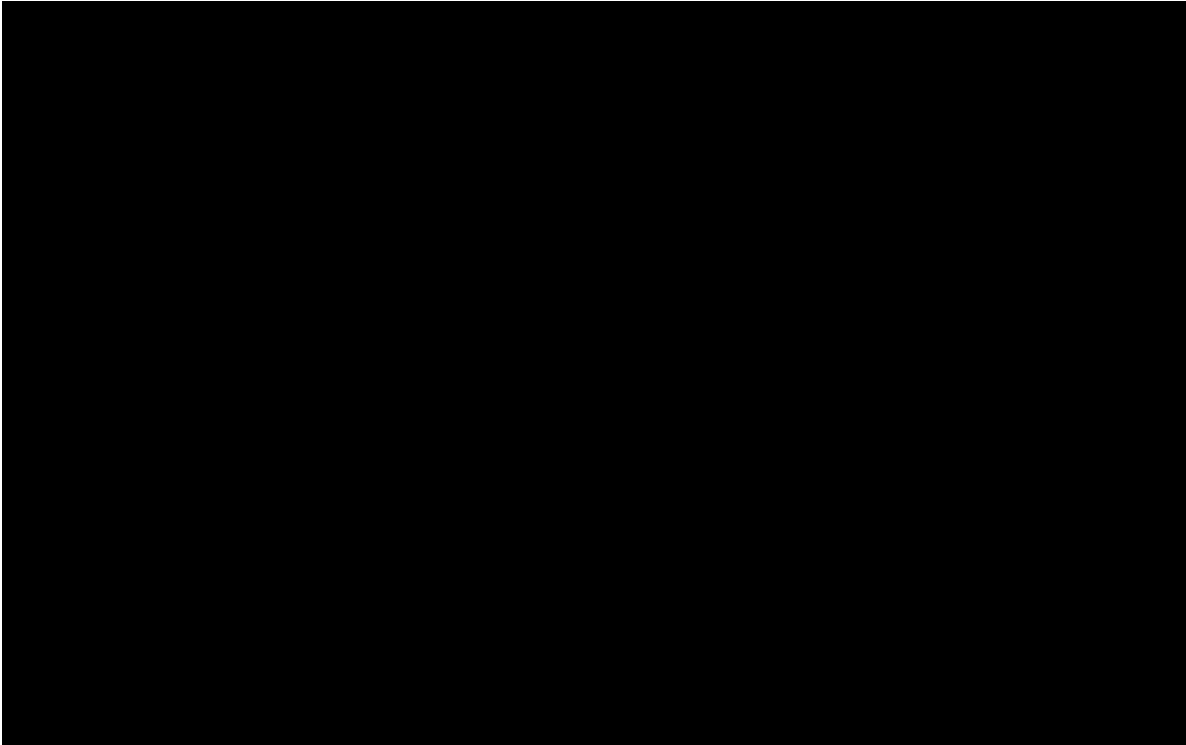


Fig. 3: New T-Mobile Home Internet Eligible Areas in 2024

For In-Home Broadband Eligible Areas, the network model is used to determine the number of households in the In-Home Broadband Eligible Area that could be served by New T-Mobile (“Supported Households”). This analysis shows that New T-Mobile will have the capacity to support [REDACTED] households by 2024.⁵⁰ Of these [REDACTED] households nationwide, there are [REDACTED] Supported Households (approximately [REDACTED]) that today have no choice for in-home broadband.⁵¹ In rural areas, where there is even less service or competitive choice, the beneficial impact of New T-Mobile Home Internet is even greater. Of the roughly [REDACTED] rural Supported Households, approximately [REDACTED] ([REDACTED])

⁴⁹ *Id.*

⁵⁰ *See id.*; *see also* Fig. 5 (“New T-Mobile Home Internet Eligible and Supported Households in 2021 and 2024”).

⁵¹ McDiarmid Decl. at ¶8.

would have no choice for in-home broadband in 2024.⁵² New T-Mobile Home Internet's ability to serve millions of households that have no competitive alternatives creates a tremendous economic benefit that will greatly enhance customer experience and drive down prices for consumers in these areas.⁵³

A map of New T-Mobile Home Internet's Supported Households is provided in Figure 4 below. The colors represent the number of Supported Households in each Census Block, with darker colors representing higher numbers and lighter colors representing lower numbers. For example, a census block with the lightest shade of blue will contain between one and twenty-five Supported Households, whereas a census block with the darkest shade of blue will contain greater than one hundred Supported Households. When summed, the total of all Supported Households in all Census Blocks reflected in Figure 4 is equal to [REDACTED].

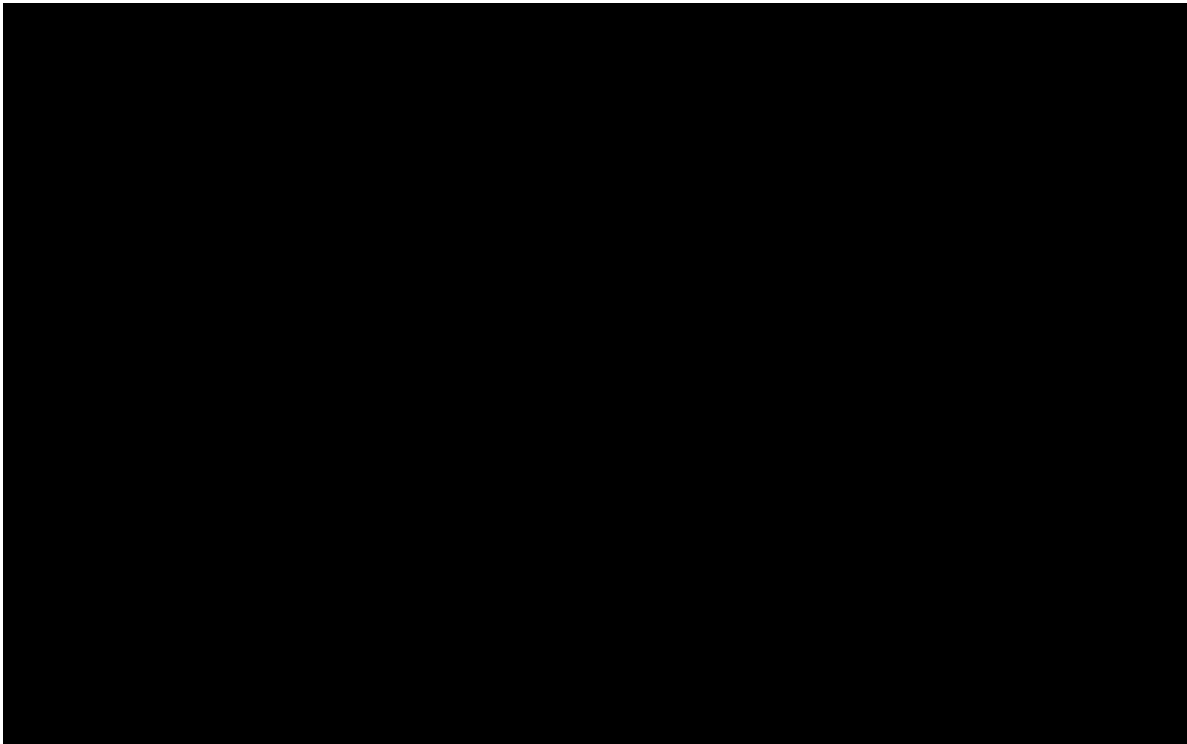


Fig. 4: New T-Mobile Home Internet Supported Households in 2024

The full dimensions of New T-Mobile's potential benefits for in-home broadband consumers lacking service or choice is set forth below:

⁵² *Id.*

⁵³ *See id.*

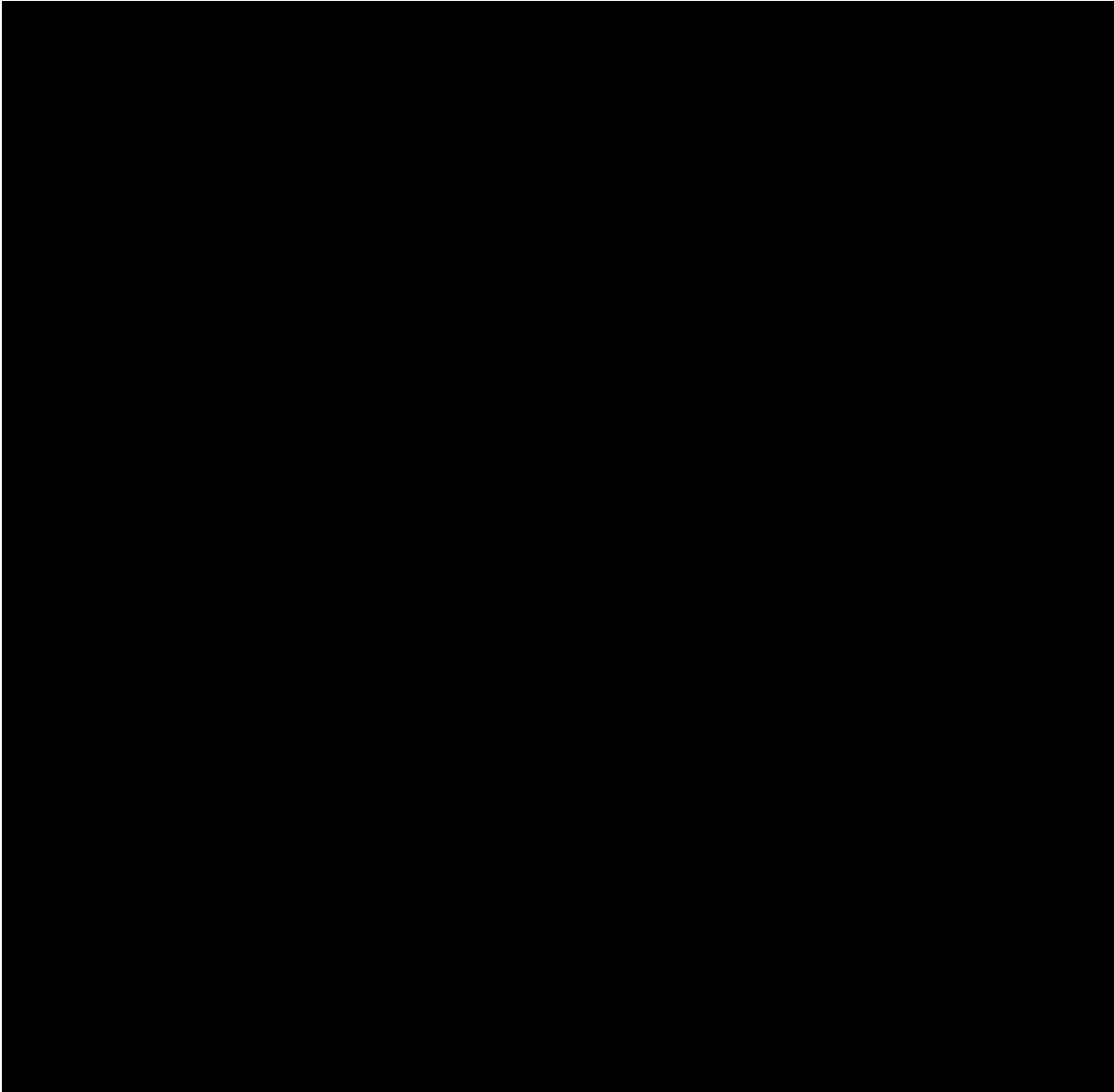


Fig. 5: New T-Mobile Home Internet Eligible and Supported Households in 2021 and 2024

As the network capacity increases, so too will the number of households served by New T-Mobile's Home Internet. The following chart shows the business plan for the ramp-up of subscribers from 2019 through 2024:

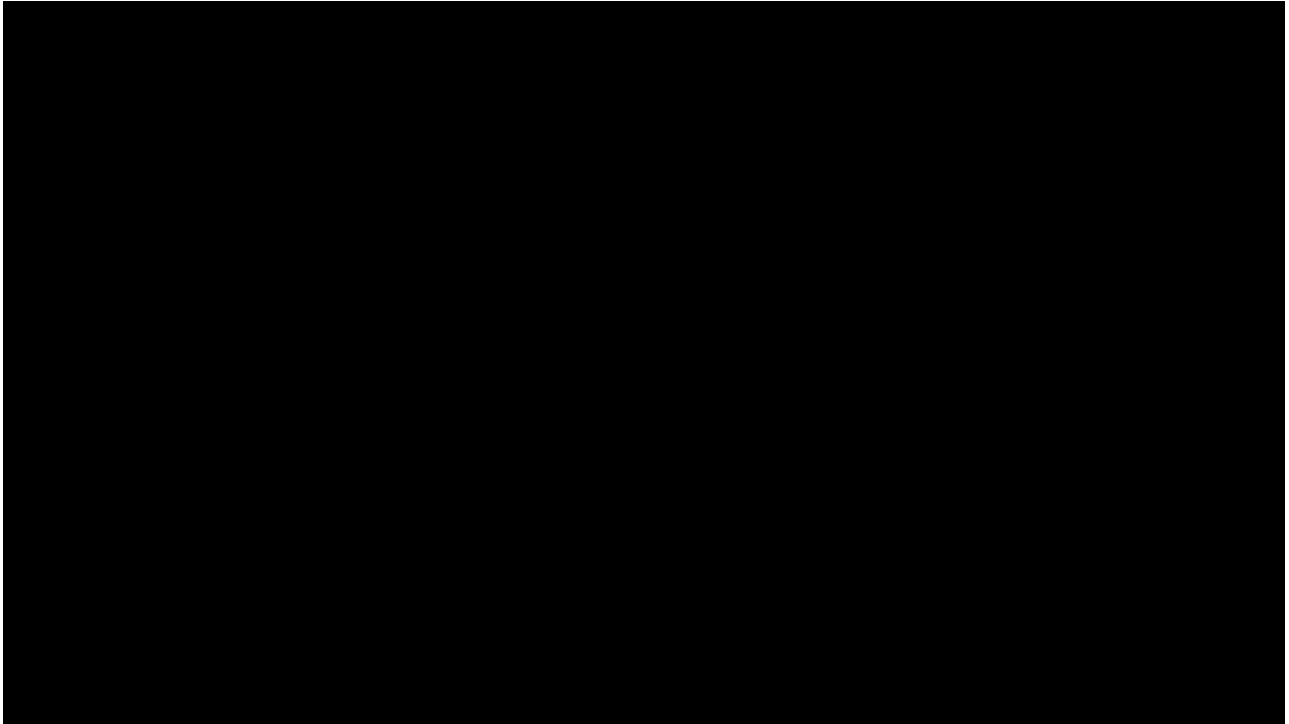


Fig. 6: New T-Mobile Home Internet Subscribers, 2019 - 2024

For consumers, New T-Mobile provides a unique opportunity to bring disruptive competition across the country by providing an attractive in-home broadband option to households with no service or no choice of provider, many of which are located in rural areas. As these facts reflect, the merger will have a significant impact on closing the Digital Divide by bringing rural Americans the in-home broadband service they need and want.

IV. NEW T-MOBILE WILL HAVE STRONG FINANCIAL INCENTIVES TO DELIVER IN-HOME BROADBAND WHERE SERVICE AND CHOICE DO NOT EXIST

A. The Merger Uniquely Positions New T-Mobile to Successfully Disrupt In-Home Broadband

The merger creates a solution to the challenges and barriers to entry that have long deterred competitive entry by wireline in-home broadband providers. First, building a wired broadband network, especially in rural and underserved areas can be very costly and, because of the low population densities of rural areas, there are relatively few potential subscribers over which to distribute these high costs. In contrast, the business logic of the merger is that New T-Mobile will already be deploying virtually all of the technical capabilities necessary to provide the in-home service and expanding further into rural areas purely based on its mobile wireless

plans. Those upgrades will result in massive increases in capacity, well in excess of planned wireless traffic in some areas, and that excess capacity can be used to offer in-home broadband service without meaningfully degrading mobile wireless service. Therefore, the incremental costs of readying the New T-Mobile network to deploy the proposed in-home broadband service are extremely low.⁵⁴ That is true in all areas—both rural and non-rural.

Second, it can be costly for cable and telco firms to connect a new subscriber using a wired service and to service existing customers in rural areas. Wired connections, particularly in rural areas, may require a physical extension of the network to the household (*e.g.*, a cable drop), as well as the expense of a truck roll, continued maintenance, servicing, and other recurring costs. By contrast, the “broadband in a box” solution that New T-Mobile will utilize results in extremely low incremental costs as there are no trucks to roll, wires to run, downed poles (due to inclement weather) to address, service calls to be made, or additional infrastructure to install. Instead, New T-Mobile will simply ship a box to the customer’s home for the customer to self-install. New T-Mobile’s marketing approach will target pre-qualified areas and customers for an efficient and low-cost service rollout.

The New T-Mobile business plan thus overcomes the financial obstacles and disincentives that have discouraged cable and telco firms from expanding in-home broadband services into rural and other underserved areas. For the merged company, the incremental costs of offering the service are minimal. New T-Mobile’s mobile service business plan contemplates aggressive expansion into rural areas and considers rural customers to be an important growth area. This is reflected throughout the record and confirmed by the network build plan, as well as the proposed addition of up to five new customer care centers and 600 or more new retail stores located in small towns and rural areas.⁵⁵ The rural expansion of the combined company’s 5G network brings with it the capacity to provide in-home broadband services in many of these same areas.

The business plan for the New T-Mobile Home Internet service starts with the simple proposition of monetizing excess capacity not required for core mobile wireless services by offering a high speed Home Internet service. The capacity encompasses geographic areas covering over half the country’s households and in which an estimated 9.5 million households will be served. The excess capacity comes about due to a unique benefit of the transaction—the combination of T-Mobile’s spectrum with Sprint’s block of 2.5 GHz spectrum. When a 2.5 GHz radio is deployed on a tower, it produces a very large increment to capacity all at once. During the New T-Mobile integration, T-Mobile is able to combine deployment of these 2.5 GHz radios with its 600 MHz rollout, resulting in a very wide deployment of 2.5 GHz. While many of these areas need some 2.5 GHz to be deployed in order to provide sufficient capacity to meet New T-Mobile’s performance thresholds, traffic in these areas would end up putting very little load on

⁵⁴ There will be a [REDACTED] for the initial development of the platform and systems for the broadband-specific product. Sievert Decl. at ¶9.

⁵⁵ See, *e.g.*, Public Interest Statement at 64; *T-Mobile and Sprint Announce Post-Merger Plans to Build Five New T-Mobile Customer Experience Centers That Will Create Thousands of New American Jobs*, T-Mobile Newsroom (Jan. 30, 2019), <https://www.t-mobile.com/news/t-mobile-sprint-new-customer-experience-centers>.

the 2.5 GHz spectrum, leaving much of it available to provide wireless fixed broadband service. The result is that New T-Mobile will gain substantial excess capacity in a number of areas for a very low cost.

The merger, by combining the complementary spectrum and cell sites of T-Mobile and Sprint, creates a broad geographic footprint with deep capacity. This combination of spectrum has huge advantages over mmWave approaches in terms of geographic coverage, allowing for simpler self-installation, flexibility in router placement in the home, and reliability. Indeed, the mmWave configurations presently available require an outdoor antenna—or, at a minimum, very precise indoor placement, with a high gain antenna to overcome the serious propagation challenges. In short, the merger creates capacity, low costs, and the right mix of spectrum to provide an aggressively priced and competitive in-home service in areas where it is not otherwise going to be possible or remunerative.

As a result, the merger creates an opportunity to bring high speed broadband service to millions of Americans who live outside the areas that wired (or any) broadband providers have elected to serve. The lack of broadband offerings is unlikely to change on its own as none of the major broadband providers has shown any inclination or has the financial incentives to expand into rural America or extend service where none currently exists. In recognition of this marketplace reality, the Commission, Congress, and the Administration have sought for over a decade to find solutions—whether through subsidies or incentives—to bring broadband to the unserved and underserved. While the gap has closed somewhat in recent years, the evidence suggests that other solutions are needed.⁵⁶

New T-Mobile will be highly incentivized to be the Un-wired and Un-cabled disruptor and deliverer of in-home broadband. Indeed, Home Internet will be a top corporate priority for New T-Mobile. The business plan forecasts that Home Internet will be a leading contributor to New T-Mobile's growth trajectory—accounting for [REDACTED] in annual EBITDA by 2024.⁵⁷ In contrast, existing fixed broadband providers with embedded wired infrastructures have dramatically different incentives. If they fully exploit the potential of wireless to serve as a replacement or substitute for wired services, they cannibalize their established in-home businesses.⁵⁸ New T-Mobile has no legacy wired in-home broadband businesses to protect and, to the contrary, has strong incentives to use wireless technologies to take on wired legacy services.

Home Internet service will also be a critical element of maximizing the profitability of New T-Mobile's video business. T-Mobile's acquisition of Layer3 provided it with a foothold in the video distribution marketplace, while positioning the company to leverage its national

⁵⁶ See, e.g., H. Trostle & Christopher Mitchell, "Profiles of Monopoly: Big Cable and Telecom," Institute for Local Self-Reliance in Minneapolis (July 31, 2018), available at <https://ilsr.org/wp-content/uploads/2018/07/profiles-of-monopoly-2018.pdf>.

⁵⁷ Sievert Decl. at ¶7.

⁵⁸ MoffettNathanson, "Broadband Q4 2018: Broadband Growth Bounces Back... with Thanks to New Household Formation" at 7-9, Mar. 6, 2019.

distribution footprint for expansion of the business going forward. Home Internet is the realization of the national distribution footprint that will help maximize Layer3's potential.

Coupled with Home Internet, Layer3 will provide a supercharged content distribution platform providing packages with more than 275 HD channels, a growing selection of 4K video, and in-home digital video recording to homes across the country. Reliable 4K streaming requires download speeds of approximately 25 Mbps and, as we have discussed, 25 Mbps will be the minimum speed for customers of the Home Internet Service. Seventy-four percent of households that subscribe to both cable TV and Internet do so via a "double" or "triple-play" bundle,⁵⁹ and Home Internet offers a "full replacement" that will compete with current ISPs for existing double/triple-play subscribers. The combination of Home Internet and Layer3 will also help reduce New T-Mobile's churn, both in its Home Internet and core mobile businesses (AT&T + DirecTV subscribers have half the churn of standalone Video subscribers).⁶⁰ The New T-Mobile business plan (Build 9) assumes ■ percent of Home Internet subscribers will also subscribe to New T-Mobile video in 2019, growing to ■ percent by 2022. Video is projected to contribute ■ in annual EBITDA by 2024.⁶¹

Finally, Home Internet also reinforces New T-Mobile's ability to compete aggressively in its core mobile wireless services. Home Internet provides a strong defense against competitors who use bundles to attract customers by providing New T-Mobile with its own competing bundle of broadband and mobile wireless services. Building bundles and solving pain points in Home Internet will deepen customer relationships and loyalty, enable New T-Mobile to offer a full suite of products (Home Internet, Video, and Wireless), and allow the company to maximize its customer value proposition and remain competitive in a bundling environment.

B. New T-Mobile's Go-to-Market Plan Leverages Merger-Created Capacity and Lower Costs to Disrupt In-Home Broadband and Serve Approximately 9.5 Million Households

The New T-Mobile go-to-market strategy for its Home Internet service is built on three key advantages flowing from the merger:⁶²

- *Low incremental network cost.* By leveraging excess capacity in New T-Mobile's network, there will be no material incremental network investment needed. There will be a ■, however, for the initial development of the platform and systems for the broadband-specific product.

⁵⁹ Leichtman Research Group, Inc., "Pay-TV in the U.S. 2017" (Dec. 21, 2018).

⁶⁰ Randall Stephenson, CEO, AT&T, 4Q 2017 Earnings Call (Jan. 31, 2018) ("[T]he churn rate of our DirecTV customers who have our wireless service is nearly half that of stand-alone satellite subscribers.").

⁶¹ Sievert Decl. at ¶8.

⁶² *Id.* at ¶9.

- *Low Incremental Distribution Costs.* New T-Mobile also will leverage existing channels used for core mobile wireless services (phone, web, store, and supply chain). Thanks to the core mobile wireless business, New T-Mobile will have 7,000 potential physical Home Internet distribution points, including over 600 new locations to serve small towns and rural areas. The New T-Mobile will also leverage distribution and customer care learning of the standalone LTE trial.
- *Low Servicing Costs.* Unlike wired broadband or mmWave fixed wireless, there is no requirement for external CPE or truck rolls. Rather, New T-Mobile will ship to the customer a New T-Mobile Home Internet Router, which the customer can self-install using a mobile app. T-Mobile's cost of providing the routers is expected to decline over time based on increased volume. In addition, the existing core wireless customer care Team of Experts can be utilized to provide high quality service, while ensuring low care costs.

The forecasted usage for New T-Mobile's Home Internet Service is set forth in the chart below. It assumes [REDACTED]

[REDACTED] For points of reference, Altice reported an average monthly data usage per household of approximately 250 GB for Q4 2018⁶⁶ ([REDACTED]). Comcast's median data usage as of December 2018 was 174 GB.⁶⁸

⁶³ [REDACTED]

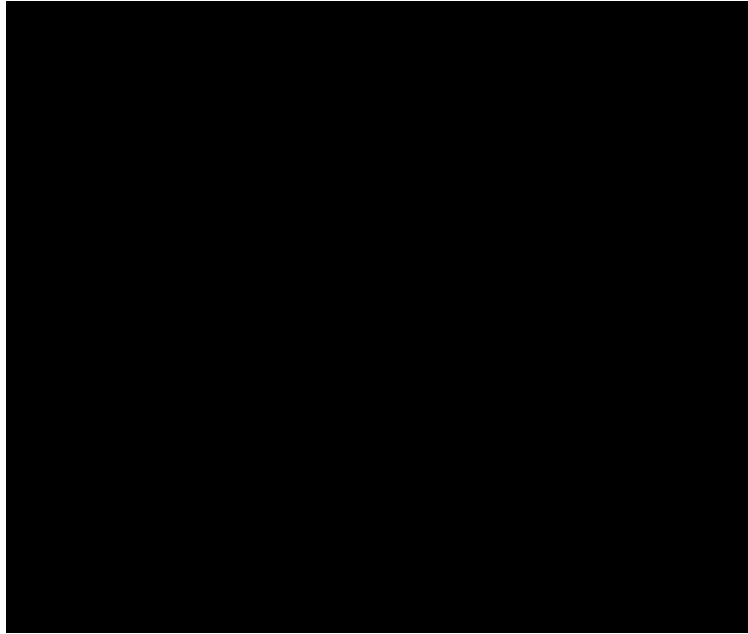
⁶⁴ [REDACTED]

⁶⁵ Sievert Decl. at ¶12.

⁶⁶ Altice USA, "Q4 and Full-Year 2018 Results" (Feb. 21, 2019), *available at* http://s22.q4cdn.com/118672413/files/doc_financials/quarterly_reports/2018/q4/ATUS-Q4-2018-Results-Presentation-vFINAL.pdf.

⁶⁷ [REDACTED]

⁶⁸ Xfinity, "What is the median usage of people on your network today?," <https://www.xfinity.com/support/articles/data-usage-average-network-usage> (last accessed Mar. 3, 2019).



[REDACTED]

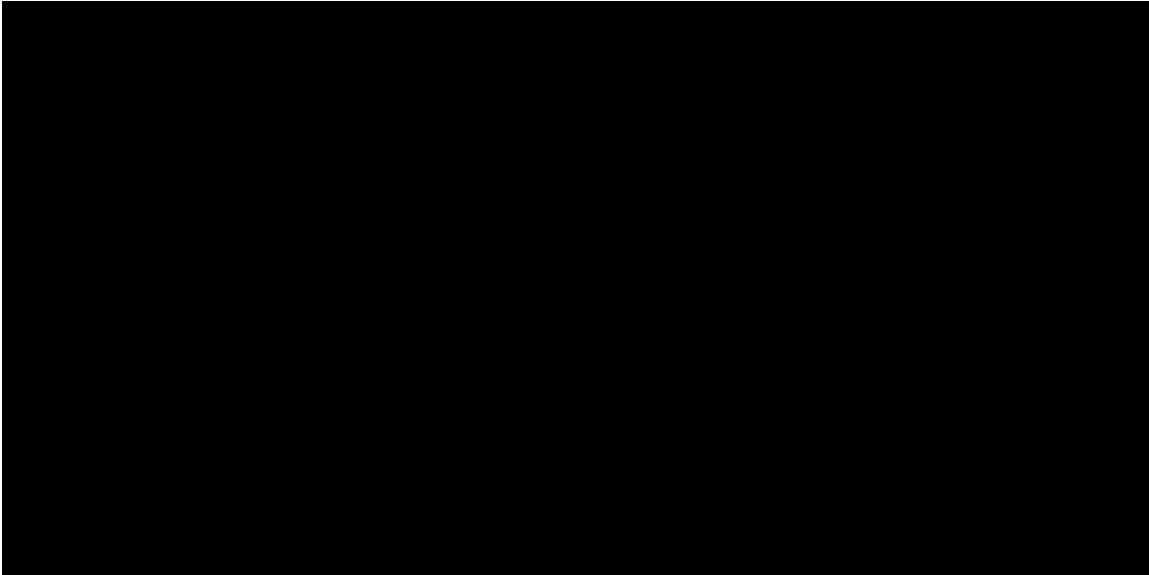
[REDACTED]

C. New T-Mobile's Home Internet Service Will Deliver Excellent Economics

New T-Mobile's Home Internet business is expected to be [REDACTED]
[REDACTED]⁶⁹ [REDACTED] Conservative Home Internet estimates still result in [REDACTED]
[REDACTED] in run-rate EBITDA from just [REDACTED] of initial capex by 2024. The service will have capital returns that far exceed mobile wireless industry norms. There is also potentially more financial upside: if New T-Mobile were to achieve gross margin that is comparable to the most recent projections for gross margin for the In-Home Broadband business in the standalone case (approximately [REDACTED]), the opportunity could produce approximately [REDACTED] EBITDA by 2024. It is anticipated that cash generation [REDACTED],⁷⁰ as reflected in the chart below.

⁶⁹ Sievert Decl. at ¶13.

⁷⁰ This is due to higher subscriber acquisition costs during the ramp-up period.



Another demonstration of the financial attractiveness, and hence incentives, for T-Mobile to pursue in-home broadband is to compare the lifetime value of an in-home broadband customer to the lifetime value of a wireless customer.⁷¹ The conservative (Build 9) estimate for New T-Mobile's Home Internet net Customer Lifetime Value ("CLV") is an attractive [REDACTED].⁷² If an [REDACTED] gross margin is assumed, home broadband CLV would be even higher ([REDACTED]), meaning New T-Mobile would have a rational and strong profit-seeking incentive to pursue this business.⁷³ In addition, T-Mobile believes that providing in-home broadband service to a customer could make that customer more likely to select New T-Mobile for other services (like video and mobile wireless) and stay longer when they do. Though not explicitly included in Build 9 financials, the additional CLV benefit from this could be [REDACTED] from video⁷⁴ and [REDACTED] from mobile wireless for reduced wireless churn,⁷⁵ increasing the attractiveness of the opportunity even more.

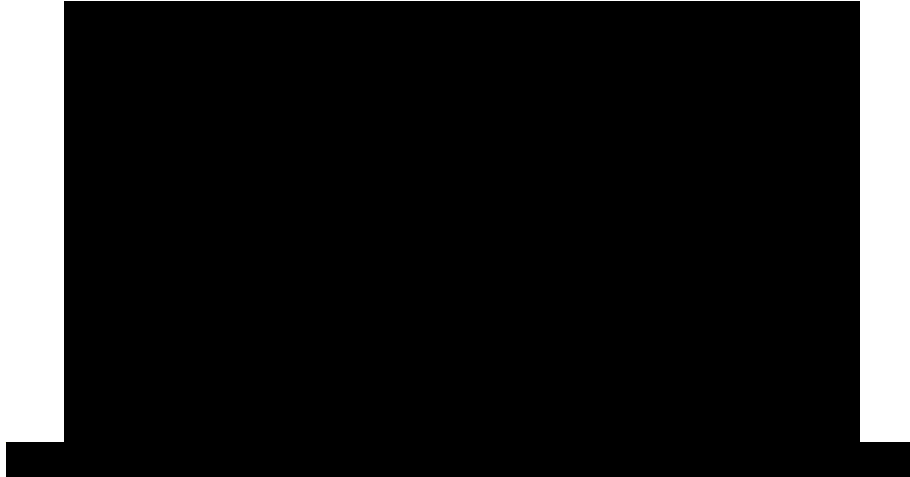
⁷¹ See *id.* at ¶14.

⁷² *Id.*

⁷³ *Id.*

⁷⁴ Forty percent of Home Broadband subscriptions are double-play, and 50 percent are originated by Home Broadband (based on 2024 blended Video CLV). *Id.*

⁷⁵ Estimated tenure of approx. [REDACTED] (churn approximately [REDACTED]), [REDACTED] improvement in churn ([REDACTED]) results in approximately [REDACTED] of additional tenure (approximately [REDACTED]). *Id.*



Finally, the New T-Mobile Build 9 key assumptions for Home Internet are as follows:⁷⁶

1. **Subscribers:** Penetration can reach approximately 7 percent of total U.S. households by 2024 (9.5M potential subscribers); stays within limits of existing network capacity
2. **ARPU:** ARPU [REDACTED]
3. **CCPU:** CCPU [REDACTED] (assumed to be [REDACTED] percent of ARPU)
4. **Acquisition cost:** [REDACTED] one-time cost includes equipment and other CPGA expenses
5. **Capex:** Development capex: [REDACTED] for platform/systems; usage capex: No material incremental network investment

⁷⁶ Sievert Decl. at ¶16.



*(1) Excludes stock based compensation, (2) Assuming no financing or tax impact

As the forgoing explains, an effect of the merger is to make in-home broadband a financially compelling business for New T-Mobile.⁷⁷ The availability of capacity and extraordinarily low incremental costs of the service make all households, particularly those in rural areas, attractive potential customers.

V. AMERICAN CONSUMERS WILL SAVE BILLIONS OF DOLLARS ANNUALLY

The consumer welfare effects of the merger will be enormous. Cable margins appear to be overwhelmingly weighted now on in-home broadband services where competition does not exist or is limited. The merger will create consumer enhancing competition that saves in-home broadband customers significant dollars each month. Moreover, there will be tremendous consumer welfare benefits from New T-Mobile providing access to service where no in-home broadband service is offered at all.

The consumer benefits come from three complementary New T-Mobile merger-specific sources. First, New T-Mobile Home Internet will be [REDACTED] per month less expensive than incumbent in-home broadband service. By 2024, approximately 9.5 million households could be paying less for in-home broadband.

Second, there is the use of New T-Mobile's mobile wireless services as a substitute for incumbent in-home services. Nothing better exemplifies "Un-Wired" and Un-Cabled" than eliminating not just the wire, but the box itself. As described in the Public Interest Statement and

⁷⁷ *Id.* at ¶17.

Joint Opposition, the blazing fast speeds of the New T-Mobile 5G network will enable millions of consumers to eliminate their in-home wireline or cable broadband service altogether and rely exclusively on New T-Mobile's broadband wireless services for their in-home needs.⁷⁸ With nearly ubiquitous nationwide speeds in excess of 100 Mbps, New T-Mobile will close the performance gap typically separating in-home and mobile services. In fact, given the performance expected of the New T-Mobile 5G network, T-Mobile has estimated that 5.8 million households will use their New T-Mobile 5G mobile services for all their broadband needs (whether in-home or mobile) by 2021 and a total of 6.3 million households by 2024.⁷⁹

Third, direct competition to in-home broadband incumbents caused by the introduction of the Home Internet service will also benefit customers of incumbent in-home broadband providers. These traditional providers are likely to respond to New T-Mobile's market entry by lowering their prices and improving their services to meet this new competitive threat. Further, because New T-Mobile will offer its service in many areas across the country, these providers would be pressured to lower their prices in all markets.

In order to quantify the combined consumer welfare benefits of New T-Mobile bringing competition and choice to in-home broadband services, Dr. Harold Furchtgott-Roth examined the effects based on the aggressively priced New T-Mobile in-home service.⁸⁰ Specifically, he considered: (1) those who switch to the New T-Mobile wireless in-home broadband service from rival fixed in-home broadband services; (2) those who, in response to lower prices, initiate in-home broadband services with another provider; and (3) those who remain with their current broadband provider but at higher quality of service and lower prices.⁸¹

As a base case of potential reasonable values in 2024, Dr. Furchtgott-Roth considered the following: (1) New T-Mobile in-home fixed wireless customers would pay [REDACTED] per month than they would have absent the proposed merger and (2) other in-home broadband customers who do not switch to either New T-Mobile broadband offering would pay \$5-10 less per month than they would have absent the proposed merger.

As set forth in his previously submitted declaration, combined, these consumer savings are between \$5-11 billion annually based on the following:

- [REDACTED] for the approximately 9.5 million consumers switching to New T-Mobile's in-home fixed wireless broadband service assuming they are paying [REDACTED] less per month;

⁷⁸ See *Joint Opposition of T-Mobile and Sprint*, WT Docket No. 18-197 at 88-91 (Sept. 17, 2018) ("Joint Opposition").

⁷⁹ See Sievert Reply Decl. at ¶10.

⁸⁰ Furchtgott-Roth Decl. at 1.

⁸¹ *Id.* at 1.

- \$195-780 million for an estimated 6.5-13 million new fixed broadband customers; and
- \$3.972-7.944 billion for the 66.2 million in-home fixed broadband consumers not switching to New T-Mobile service, but benefitting from the competitive response of other in-home broadband providers and paying \$5-10 less per month.

Dr. Furchtgott-Roth has “not attempted to estimate the increase in the quality of in-home broadband service, both by New T-Mobile and its competitors, as a result of the merger—and the associated improvement in consumer surplus—but the quality increase and consumer surplus are likely substantial.⁸² Consequently, the estimates of increased consumer surplus based only on price changes presented in his declaration almost certainly *underestimate* total consumer surplus changes that would also account for quality improvements” in rural areas.⁸³

VI. THE IN-HOME BENEFITS FOR COMPETITION AND CONSUMERS ARE MERGER-SPECIFIC, SUBSTANTIAL AND COMPELLING

The enormous benefits for consumers resulting from New T-Mobile’s in-home broadband offering are merger-specific and verifiable. The increased capacity and improved cost structure of New T-Mobile’s broad and deep nationwide 5G network will allow the merged company to provide in-home broadband service in areas that cover over half of all U.S. households and [REDACTED] of rural U.S. households. Within those areas, approximately 9.5 million households are expected to be served.

In-home broadband service of this scale cannot be achieved by either T-Mobile or Sprint on its own. Sprint has no current plans to provide in-home fixed wireless broadband service as contemplated for the New T-Mobile. T-Mobile, as a standalone, has limited plans at best.⁸⁴

[REDACTED]

85

As evidenced by the detailed business plan for New T-Mobile Home Internet, the merger benefits are verifiable. The Applicants have provided a comprehensive review of how and when the service will be made available; the key terms and conditions of the offering; and the business case showing that the service will be as profitable. In addition, the Home Internet service protects and enhances revenues from the core mobile wireless service as well as from New T-

⁸² *Id.* at 2-3.

⁸³ *Id.* at 3 (emphasis in original).

⁸⁴ *See* Mayo Decl. at ¶¶2, 4.

⁸⁵ *Id.* at ¶4.

Mobile's video distribution business. Simply stated, the Home Internet business monetizes available spectrum capacity and assets to produce a financially attractive source of revenue.

The full consumer benefits of bringing service where none exists today cannot be calculated in dollars and cents. They are priceless for those who live or work on the other side of the Digital Divide. An attempt at an economic quantification, however, shows that the cumulative consumer welfare benefits will be billions of dollars a year by 2024.⁸⁶ These benefits will flow to all in-home consumers, not just those of New T-Mobile's Home Internet, as the merger brings competition and service across the country.

VIII. CONCLUSION

T-Mobile and Sprint look forward to reviewing with the Commission and its Transaction Team the network plan, business logic, and economic analyses underlying the New T-Mobile plan to deliver in-home broadband service to approximately 9.5 million households by 2024. As this supplement to the Public Interest Statement compellingly confirms, the merger will produce profound public interest benefits for American consumers, particularly in rural areas, who need and want in-home broadband service. Indeed, the merger presents a unique opportunity to bring service and choice where none exists as well as to produce lower prices, improved service, and disruptive competition for all Americans wherever they live or work.

⁸⁶ Furchtgott-Roth Decl. at tbl. 5.

REDACTED – FOR PUBLIC INSPECTION

APPENDIX A

REDACTED – FOR PUBLIC INSPECTION

DECLARATION OF G. MICHAEL SIEVERT

**President and Chief Operating Officer,
T-Mobile US, Inc.**

***HIGHLY CONFIDENTIAL
TEXT HIGHLIGHTED***

DECLARATION OF G. MICHAEL SIEVERT

**President and Chief Operating Officer,
T-Mobile US, Inc.**

1. My name is G. Michael Sievert and I am the President and Chief Operating Officer for T-Mobile US, Inc. I have been with T-Mobile since 2012. Together with T-Mobile's Chief Executive Officer John Legere, I was directly involved in the acquisition of MetroPCS and the development of T-Mobile's Un-carrier business plan. Prior to joining T-Mobile, I had over two decades of experience at several Fortune 500 companies and as an entrepreneur. I received a Bachelor of Science in Economics degree from the Wharton School of the University of Pennsylvania, where I graduated magna cum laude.

2. In my capacity as T-Mobile President and COO, I have been engaged in the evaluation of T-Mobile's proposed merger with Sprint Corporation and the discussions concerning the business plans for the merged entity, New T-Mobile. I will be President and Chief Operating Officer for New T-Mobile.

3. This declaration discusses New T-Mobile's proposed in-home service called "New T-Mobile Home Internet" and provides an update on network and business planning that has occurred since the Joint Applications were filed nearly eight months ago.

4. ***New T-Mobile Home Internet.*** What T-Mobile has done for mobile wireless consumers, New T-Mobile will do for in-home consumers. The combined company will be relentless in removing customer pain points and changing the things people hate about their in-home broadband service. The Home Internet service initially will use an LTE router that costs approximately [REDACTED], but it will be provided to customers at no extra charge. Shortly after the merger, New T-Mobile will upgrade its Home Internet LTE router to include 2.5 GHz spectrum and 5G compatible hardware. The router is also expected to include mesh network capabilities

to enable advanced Wi-Fi connections with multiple network nodes to enhance quality as well as phone and video features. The 5G router will at the outset cost approximately [REDACTED], and that cost is expected to decline with volume. As with the LTE router, it will be provided to customers at no extra charge.

5. The Home Internet router will be delivered to the customer for self-install. The self-install process will be aided by a mobile app to guide the customer in setting up the system and finding the optimal router location in their residence. In addition, New T-Mobile's industry-leading customer care teams will be trained to assist the customer, address any problems, and answer any questions. In areas with more limited capacity, New T-Mobile will employ a targeted direct marketing approach. In markets with more capacity and broader coverage, New T-Mobile will expand distribution to retail stores with increased local media spend (similar to its mobile wireless services).

6. By full deployment of the New T-Mobile 5G network in 2024, 90 percent of customers of the Home Internet service will receive an average download speed in excess of 100 Mbps or higher (with a minimum speed of 25/3 Mbps). New T-Mobile will extend its consumer-focused Un-carrier approach to deliver an Un-wired and Un-cabled customer experience:

- A simple monthly price, set [REDACTED] below incumbent provider prices;
- No extra charge for the router;
- No installation charge;
- No contract ("Un-contract"); and
- Customer care from the Magenta Glove Team.

7. *The Merger Uniquely Positions New T-Mobile to Successfully Disrupt In-Home Broadband.* New T-Mobile will be highly incentivized to be the Un-wired and Un-cabled

disruptor and deliverer of in-home broadband. Home Internet will be a top corporate priority for New T-Mobile. The business plan forecasts that Home Internet will be a leading contributor to New T-Mobile's growth trajectory—accounting for [REDACTED] in annual EBITDA by 2024.

8. Home Internet service will also be a critical element of maximizing the profitability of New T-Mobile's video business. Coupled with Home Internet, Layer3 will provide a supercharged content distribution platform providing packages with more than 275 HD channels, a growing selection of 4K video, and in-home digital video recording to homes across the country. Reliable 4K streaming requires download speeds of approximately 25 Mbps and, as we have discussed, 25 Mbps will be the minimum speed for customers of the Home Internet Service. The New T-Mobile business plan (Build 9) assumes [REDACTED] percent of Home Internet subscribers will also subscribe to New T-Mobile video in 2019, growing to [REDACTED] percent by 2022 (video is projected to contribute [REDACTED] in annual EBITDA by 2024).

9. ***New T-Mobile's Go-to-Market Plan Leverages Merger-Created Capacity and Lower Costs to Disrupt In-Home Broadband.*** The New T-Mobile go-to-market strategy for its Home Internet service is built on three key advantages flowing from the merger:

- *Low incremental network cost.* By leveraging “excess” capacity in New T-Mobile's network, there will be no material incremental network investment needed. There will be a [REDACTED], however, for the initial development of the platform and systems for the broadband specific product.
- *Low Incremental Distribution Costs.* New T-Mobile also will leverage existing channels used for core mobile wireless services (phone, web, store and supply chain). Thanks to the core mobile wireless business, New T-Mobile will have 7,000 potential physical Home Internet distribution points, including over 600 new locations to serve

small towns and rural areas. The New T-Mobile will also leverage distribution and customer care learning of the standalone LTE trial.

- *Low Servicing Costs.* Unlike wired broadband or mmWave fixed wireless, there is no requirement for external CPE or truck rolls. Rather, New T-Mobile will ship to the customer a New T-Mobile Home Internet Router, which the customer can self-install using a mobile app. T-Mobile's cost of providing the routers is expected to decline over time based on increased volume. In addition, the existing core wireless customer care Team of Experts can be utilized to provide high quality services, while ensuring low care costs.

10. To identify prospective customers, New T-Mobile will have a simple “enter an address” function on its website through which a customer can get qualified in seconds. An end-to-end web and app-based service eligibility tool will be developed and launched to enable a seamless eligibility and sign-up process.

11. Frontline representatives will use the tool to check eligibility and find the right fit with suite of bundled products. In-home broadband technical expertise will be fully integrated with our award-winning Team of Experts. This process is depicted in Exhibit 1.

12. Forecasted usage for New T-Mobile's Home Internet Service is set forth in

Exhibit 2. [REDACTED]

[REDACTED]

¹ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] For points of reference, Altice reported an average monthly data usage per household of approximately 250 GB for Q4 2018³ ([REDACTED]). Comcast's median data usage as of December 2018 was 174 GB.⁵

13. *New T-Mobile's Home Internet Service Will Deliver Excellent Economics.*

New T-Mobile's Home Internet business is expected to be [REDACTED]

[REDACTED] Conservative Home Internet estimates still result in [REDACTED] EBITDA in run-rate business from just [REDACTED] of initial capex by 2024. The service will have capital returns that far exceed mobile wireless industry norms. There is also potentially more financial upside: if New T-Mobile were to achieve a gross margin that is comparable to the most recent projections for gross margin for the Home Internet service in the standalone case (approximately [REDACTED]), the opportunity could produce approximately [REDACTED] EBITDA by 2024. It is anticipated that cash generation [REDACTED] as reflected in Exhibit 3.

² [REDACTED]

³ Altice USA, "Q4 and Full-Year 2018 Results" (Feb. 21, 2019), available at http://s22.q4cdn.com/118672413/files/doc_financials/quarterly_reports/2018/q4/ATUS-Q4-2018-Results-Presentation-vFINAL.pdf.

⁴ [REDACTED]

⁵ Xfinity, "What is the median usage of people on your network today?," <https://www.xfinity.com/support/articles/data-usage-average-network-usage> (last accessed Mar. 3, 2019).

14. The conservative (Build 9) estimate for New T-Mobile’s Home Internet net Customer’s Lifetime Value (“CLV”) is an attractive [REDACTED]. If an [REDACTED] gross margin is assumed, home broadband CLV would be even higher ([REDACTED]), meaning New T-Mobile would have a rational and strong profit-seeking incentive to pursue this business. In addition, T-Mobile believes that providing in-home broadband service to a customer could make that customer more likely to select T-Mobile for other services (like video and mobile wireless) and stay longer when they do. Though not explicitly included in Build 9 financials, we have found the additional CLV benefit from this could be [REDACTED] from video⁶ and [REDACTED] from mobile wireless for reduced wireless churn,⁷ increasing the attractiveness of the opportunity even more. Customer lifetime value for single-play subscribers is depicted in Exhibit 4.

15. The New T-Mobile Build 9 key assumptions for Home Internet are as follows:

- **Subscribers:** Penetration can reach approximately 7 percent of total U.S. households by 2024 (9.5M potential subscribers); stays within limits of existing network capacity
- **ARPU:** ARPU [REDACTED]
- **CCPU:** CCPU [REDACTED] (assumed to be [REDACTED] percent of ARPU)
- **Acquisition cost:** [REDACTED] one-time cost includes equipment and other CPGA expenses
- **Capex:** Development capex: [REDACTED] for platform/systems; usage capex: [REDACTED]
No material incremental network investment

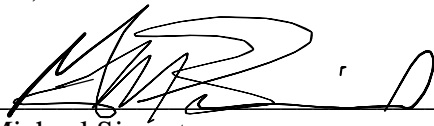
⁶ Forty percent of Home Broadband subscriptions are double-play, and 50 percent are originated by Home Broadband (based on 2024 blended Video CLV).

⁷ Estimated tenure of approx. [REDACTED] (churn approximately [REDACTED]), [REDACTED] improvement in churn ([REDACTED]) results in approximately [REDACTED] of additional tenure (approximately [REDACTED]).

REDACTED – FOR PUBLIC INSPECTION

16. As depicted in Exhibit 5, an effect of the merger is to make in-home broadband a financially compelling business for New T-Mobile. The availability of capacity and extraordinarily low incremental costs of the service make all households, particularly those in rural areas, attractive potential customers.

17. I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed on March 6, 2019.



G. Michael Sievert
President and Chief Operating Officer
T-Mobile US, Inc.

Exhibit 1

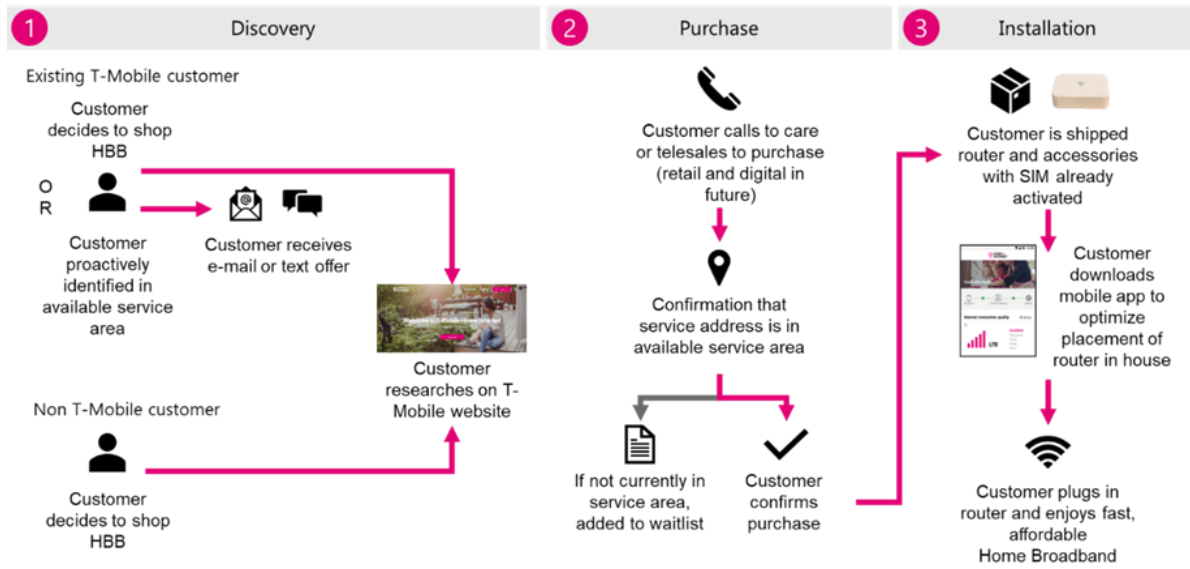


Exhibit 2

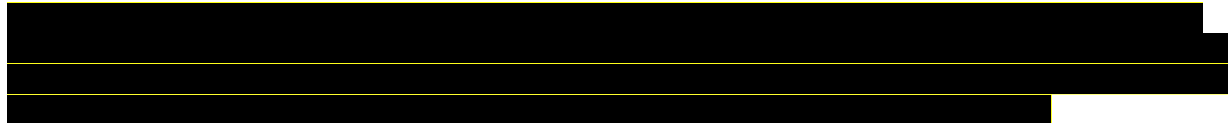
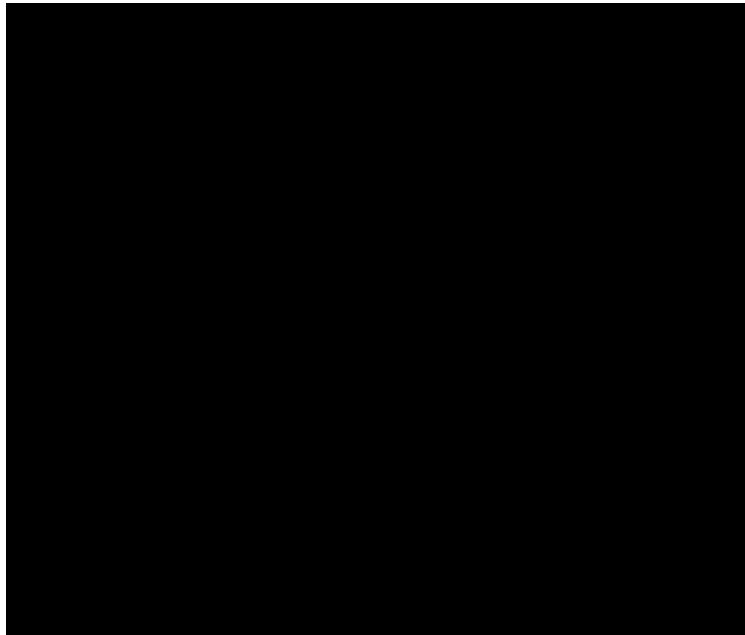


Exhibit 3

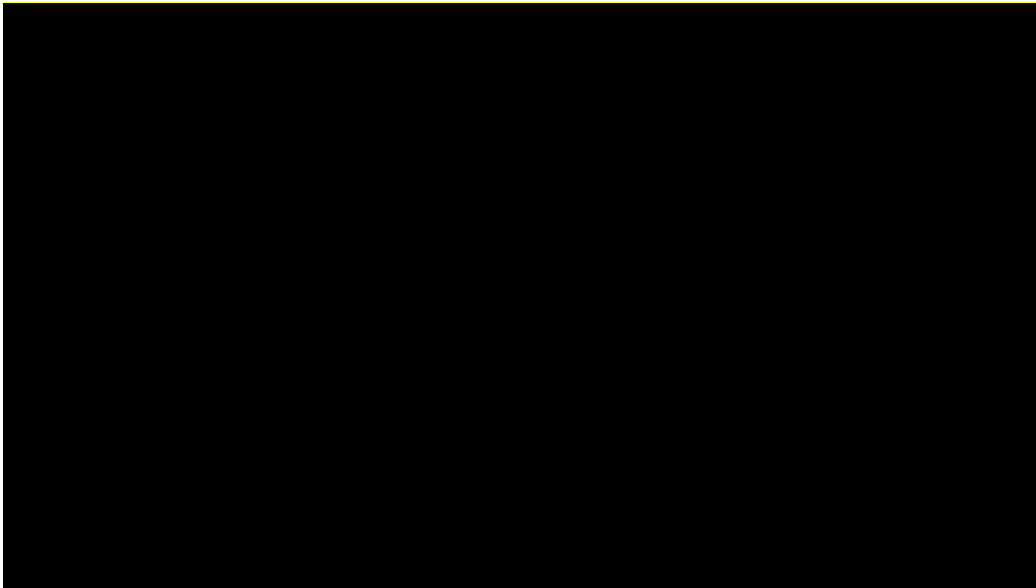


Exhibit 4

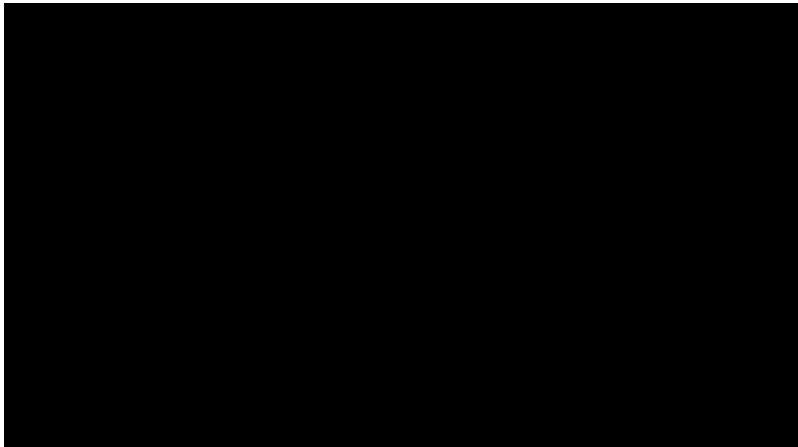


Exhibit 5



REDACTED – FOR PUBLIC INSPECTION

APPENDIX B

REDACTED – FOR PUBLIC INSPECTION

DECLARATION OF MARK MCDIARMID

**Senior Vice President of Radio Network Engineering and Development,
T-Mobile US, Inc.**

DECLARATION OF MARK MCDIARMID

**Senior Vice President of Radio Network Engineering and Development,
T-Mobile US, Inc.**

1. My name is Mark McDiarmid, and I am Senior Vice President of Radio Network Engineering and Development at T-Mobile US, Inc. (“T-Mobile”). In that role, I am responsible for radio access network design, integration, and device technology, as well as the way in which T-Mobile engineers its spectrum.

2. This declaration discusses the methodology used to quantify New T-Mobile’s 2021 and 2024 in-home broadband coverage and the related statistics provided to the Federal Communications Commission (“Commission”). As discussed below, the analysis is fundamentally based on the New T-Mobile 5G network modeling, which has previously been filed with the Commission and discussed extensively in the record.¹ In brief, to identify potential customers of in-home broadband services, we:

- Identified areas within the 5G network with coverage sufficient to support New T-Mobile’s in-home broadband offering (the “In-Home Broadband Coverage Area”);
- Calculated the areas within the In-Home Broadband Coverage Area where sufficient network capacity existed to offer in-home broadband services (the “In-Home Broadband Eligible Area”);
- Used the network model to determine the number of households (“HHs”) in the In-Home Broadband Eligible Area that could be served by New T-Mobile (the “In-Home Broadband Supported HHs”); and,
- Applied New T-Mobile’s marketing hierarchy to the In-Home Broadband Supported HHs to determine the demographic characteristics of customers New T-Mobile would serve.

Each of these steps is discussed in greater detail below.

¹ See, e.g., Montana_Capacity_Analysis.xlsx, attachment to Letter from Nancy J. Victory, counsel to T-Mobile US, Inc., to Marlene T. Dortch, Secretary, Federal Communications Commission, WT Docket 18-197 (Sept. 17, 2018) (“Engineering Model”).

3. ***Identification of the In-Home Broadband Coverage Area.*** To identify the geography that could potentially be served by a New T-Mobile in-home broadband offering, an in-home broadband link budget was developed and applied in T-Mobile’s ordinary course coverage engineering tool. The network model, as filed, relies on a link budget appropriate for 5G mobile service operations.² Although the in-home broadband analysis is based on the same sites and 5G low-band and mid-band propagation arrays as used in the mobile analysis, the link budget used for the in-home broadband analysis was designed for a service built around installed customer premises equipment (“CPE”) and coverage providing adequate signal strength to enable at least 25 Mbps download and 3 Mbps upload (“25/3”) speeds. The in-home broadband 25/3 link budget assumes a high-quality signal is needed to support the in-home broadband service using a customer-installed indoor CPE with an integrated antenna. We assume that CPE will be placed in areas maximizing signal strength, *e.g.*, near windows, and therefore the analysis does not factor in-building penetration losses. At the same time, the analysis assumes ground level installation, even though second floor, or higher, CPE installations would greatly improve the performance of the CPE. Ultimately, as shown in *Figs. 1-2* below, the link budget for in-home broadband is constrained compared to the mobile link budget, resulting in an In-Home Broadband Coverage Area that is smaller than the 5G mobile coverage area, and includes fewer HHs³—for comparative purposes, New T-Mobile would provide 5G mobile coverage to [REDACTED] HHs in 2024, as compared to in-home broadband coverage at [REDACTED] HHs in the same timeframe.

² See Response to FCC Information Request of T-Mobile US, Inc., WT Docket 18-197 (filed Sept. 5, 2018) at Engineering Disk/Specification 20. See also Letter from Nancy J. Victory, counsel to T-Mobile US, Inc., to Marlene T. Dortch, Secretary, Federal Communications Commission, WT Docket 18-197 (Dec. 28, 2018).

³ While mobile coverage is typically measured as population coverage, or “POP coverage,” in-home broadband service coverage is typically stated in terms of households.

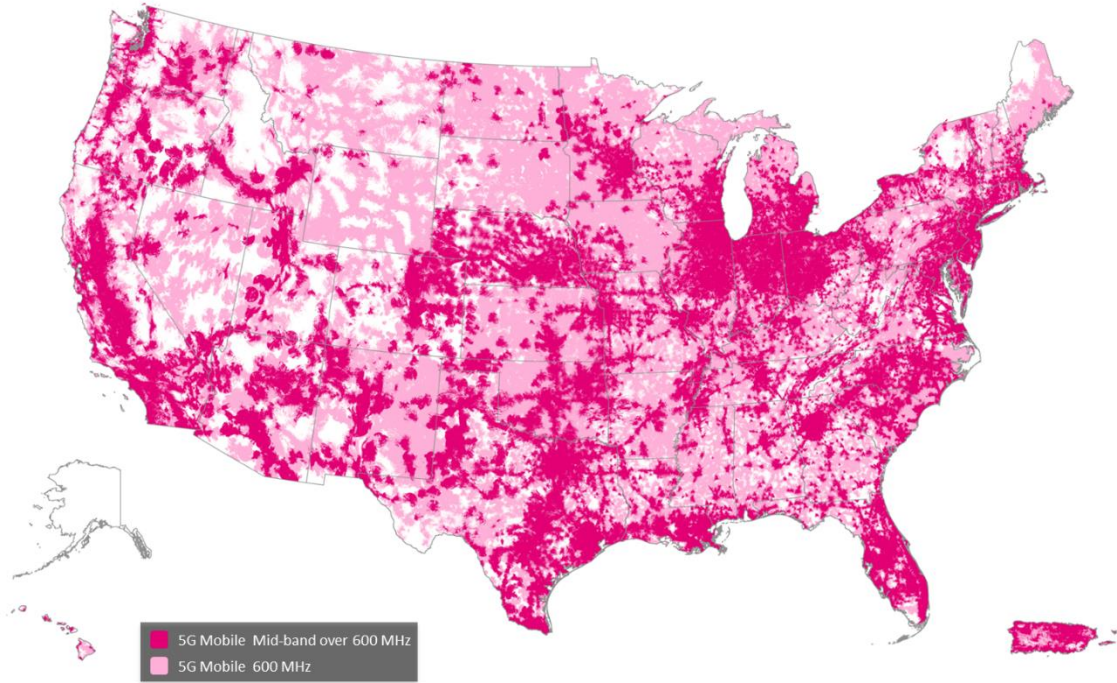


Figure 1: New T-Mobile 2024 Network Coverage Using 5G Mobile Link Budget

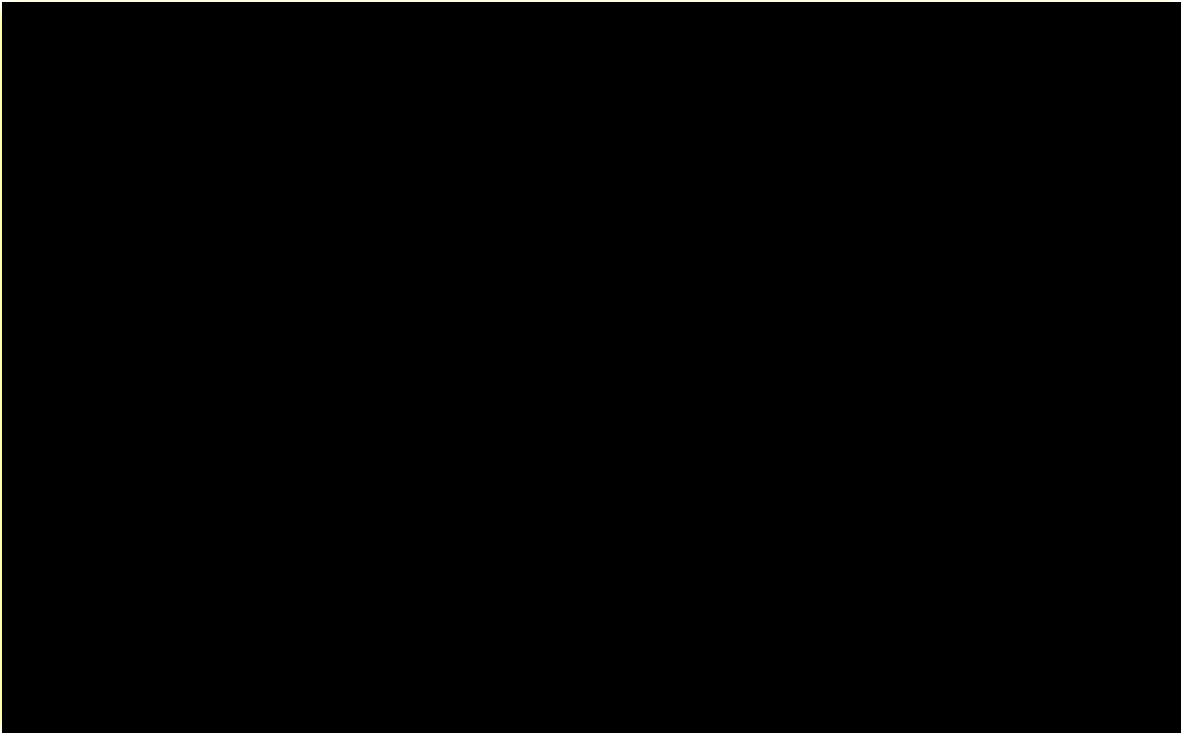


Figure 2: New T-Mobile 2024 Network Coverage Using 5G In-Home Broadband Link Budget

4. ***Calculation of the In-Home Broadband Eligible Area.*** Having determined where New T-Mobile will have network signal quality suitable for an in-home broadband

offering, we used the network model to identify the areas where sufficient network capacity will exist to allow the offering of an in-home broadband product, and how many HHs that capacity could support.⁴ That area is shown in *Fig. 3*, below. The intent of this analysis was to ensure that New T-Mobile could meet the performance requirements necessary to offer a 25/3 Mbps-or-higher-speed service, but also to ensure that the offering of an in-home broadband product will not have a material adverse impact on the mobile network experience by reducing either throughput or user experience quality for mobile subscribers more broadly. The 2024 In-Home Broadband Eligible Area covers [REDACTED] HHs and, of those eligible HHs, [REDACTED] HHs are in rural Census Blocks and [REDACTED] HHs are in areas where consumers currently have no choice in providers for in-home broadband services.

⁴ See 53a. Home Broadband Support in the New T-Mobile Network, attached as Exhibit A; *see also* Letter from Nancy J. Victory, counsel to T-Mobile US, Inc., to Marlene T. Dortch, Secretary, Federal Communications Commission, WT Docket 18-197 (Oct. 30, 2018) at Engineering Material Update/53. Broadband Capability.docx. Notably, New T-Mobile expects the distribution of in-home traffic during the day to match the distribution of mobile traffic (*e.g.*, same busy hour, same percentage of total daily traffic occurring during the busy hour, and same distribution for non-busy hours).

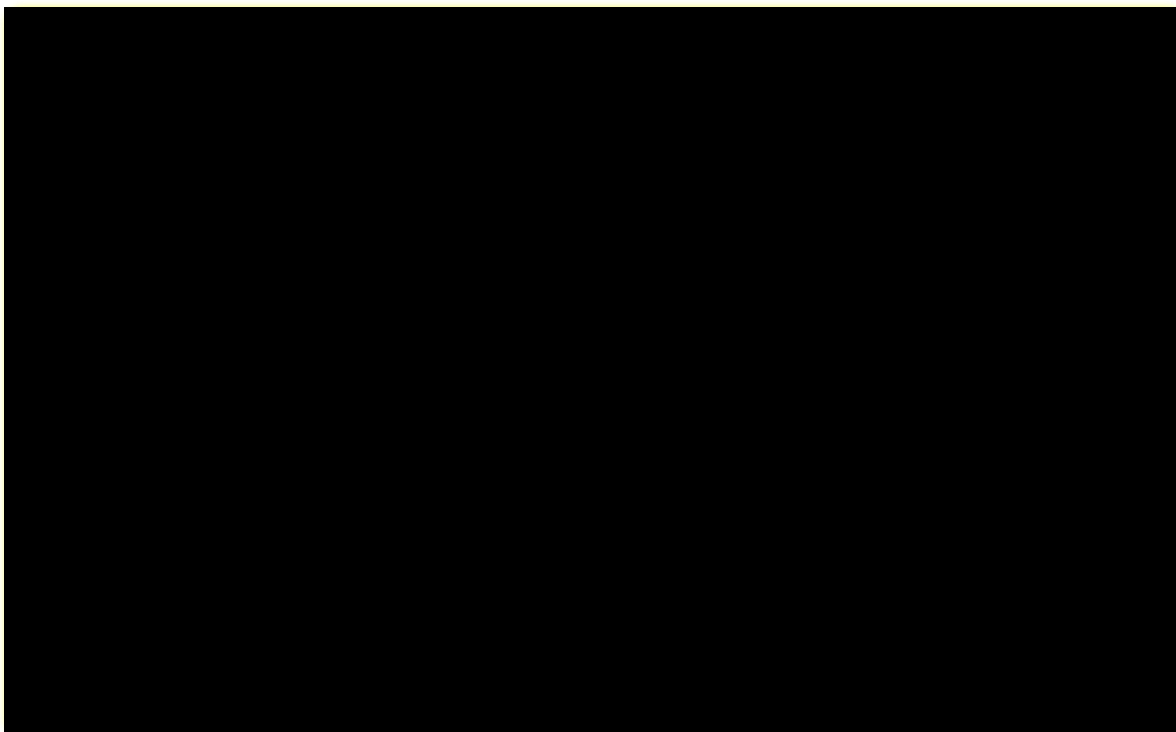


Figure 3: New T-Mobile 2024 5G In-Home Broadband Eligible Areas

5. ***Determination of In-Home Broadband Supported HHs.*** Having determined the that there is in-home broadband coverage and capacity available in a particular area, we then determine the number of In-Home Broadband Supported HHs. In a simplistic way, this can be thought of as determining, for each specific In-Home Broadband Eligible Area, whether the limiting factor is the number of HHs in the area or the in-home broadband network capacity available in the area. By example, if there is capacity to support ten HHs in a specific local geography, but there are only four HHs in that local geography, the In-Home Broadband Supported HHs for that area would be only four. Similarly, if there is capacity to support ten HHs in a specific local geography with one hundred HHs, the In-Home Supported HHs for that area would only be ten.

6. The more detailed explanation of the process starts with the output of the prior In-Home Broadband Eligible Area determination, which is actually a sector-by-sector enumeration

of the number of eligible in-home broadband HHs, where the number of eligible in-home broadband HHs can range into the hundreds. For purposes of defining the cell site/sector geographies, the analysis uses an RF coverage “best server boundary” (*i.e.*, an equal power boundary/EPB) contour where sectors have overlapping coverage. The sector data is then overlaid with the latest available (December 2017 v1) FCC Form 477 terrestrial in-home broadband availability data at a Census Block level. Based on coverage of the Census Block centroids, HHs in the Census Block are attributed to unique coverage sectors, along with in-home broadband availability data and Census demographic information. The Census urban and rural classifications follow the approach that the FCC has used and consistent with all past T-Mobile transaction filings.

7. ***Development of In-Home Broadband Service Statistics.*** Because a single sector may overlap multiple Census Blocks, the analysis applied a waterfall algorithm to associate each HH with demographic characteristics based on New T-Mobile’s business priorities. Specifically, the analysis spreads the total number of supported HHs across Census Blocks with the following priority:

- First, the analysis allocates HH capacity to Census Blocks classified as “rural” where “no choice” exists—“no choice” being defined as an area where there is either no terrestrial provider of 25/3 in-home broadband or only a single terrestrial provider of 25/3 in-home broadband, and therefore consumers do not have a choice for in-home broadband services.
- Second, after having used available capacity for HHs in rural/no choice Census Blocks, the analysis then allocates remaining HH capacity, if any, to other Census Blocks classified as “rural.”
- Third, after having used available capacity in rural Census Blocks, the analysis then allocates any remaining HH capacity to urban Census Blocks where no choice exists.
- Finally, if capacity remains after all rural and no choice urban Census Blocks, the analysis uses the remaining HH capacity for other urban Census Blocks.

Having allocated the HH capacity across the Census Blocks served by a sector, the analysis then

sums the potentially served HHs—or “supported HHs”—by geography, ultimately aggregating the data to the national level. The 2024 national supported HHs are shown graphically in *Fig. 4*.



Figure 4: New T-Mobile 2024 In-Home Broadband Supported HHs

8. The in-home broadband data has also been summarized in tabular form, shown in *Fig. 5* below. As shown in that table, the 2024 New T-Mobile In-Home Broadband Eligible Area includes [REDACTED] HHs. Finally, the number of 2024 New T-Mobile Supported HHs is [REDACTED], which is broken out into rural and urban and no-choice or choice categories.

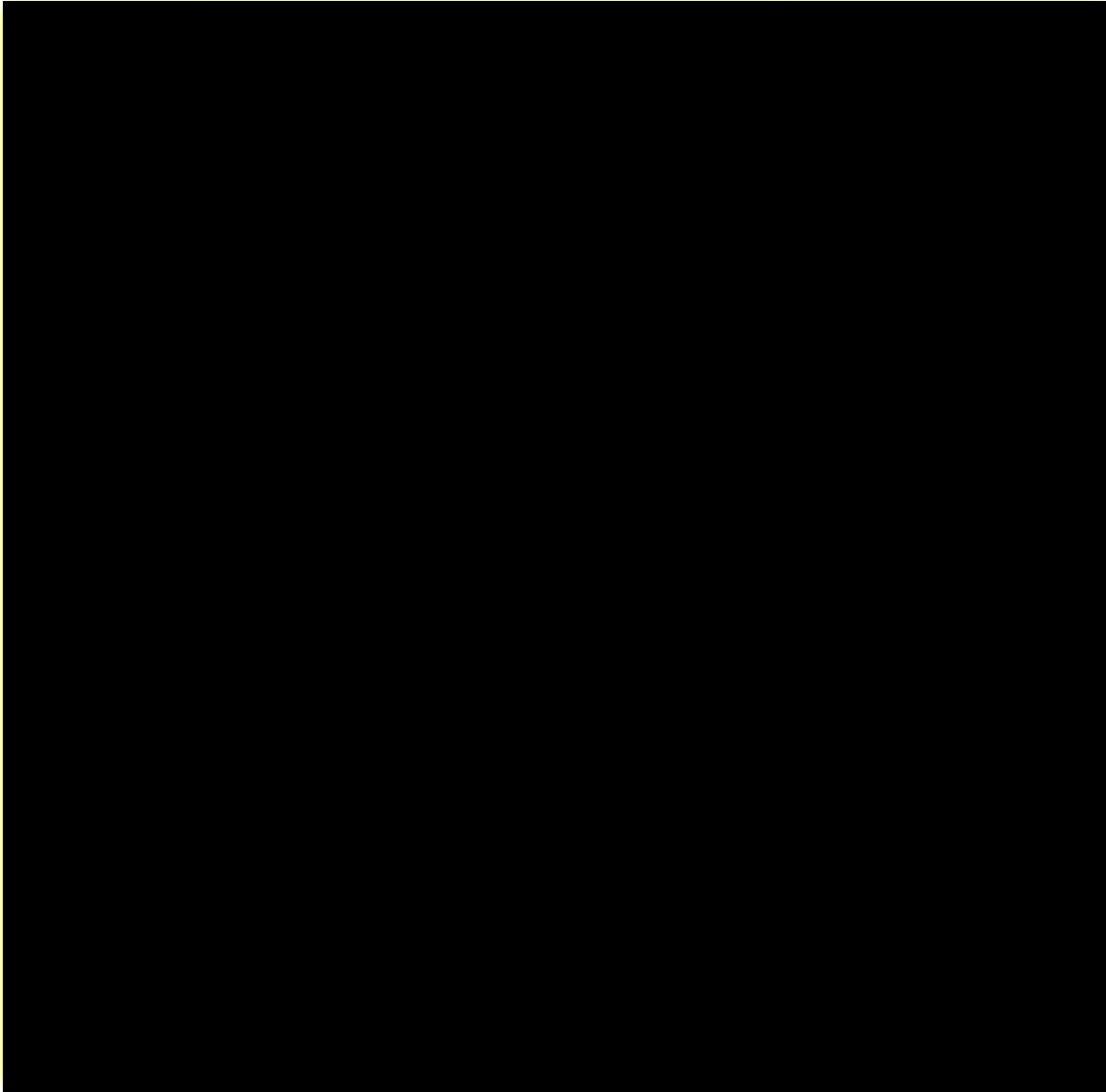


Figure 5: New T-Mobile 2021 and 2024 In-Home Broadband Coverage

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10. I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed on March 6, 2019.

A handwritten signature in black ink, appearing to read 'Mark McDiarmid', written over a horizontal line.

Mark McDiarmid
Senior Vice President of Radio Network
Engineering and Development
T-Mobile US, Inc.

REDACTED – FOR PUBLIC INSPECTION

EX. A TO DECLARATION OF MARK MCDIARMID

53a. Home Broadband Support in the New T-Mobile Network

REDACTED – FOR PUBLIC INSPECTION

[REDACTED]

REDACTED – FOR PUBLIC INSPECTION

[REDACTED]

REDACTED – FOR PUBLIC INSPECTION

APPENDIX C

**NEW T-MOBILE’S PLANNED IN-HOME BROADBAND TRAFFIC
WOULD HAVE NO MATERIAL EFFECT ON MOBILE
BROADBAND CONSUMERS’ WELFARE IN 2021 AND 2024**

Mark Israel, Michael Katz, and Bryan Keating

March 6, 2019

In a previous declaration and a subsequent letter, we analyzed the implications of T-Mobile’s proposed acquisition of Sprint for the welfare of consumers of mobile broadband services.¹ As we explained in our *IKK Declaration*, our analysis to date has assumed that the provision of in-home broadband services (sometimes referred to as “fixed broadband services” or “fixed wireless services”) would not “materially affect mobile broadband services” because T-Mobile executives have stated that “New T-Mobile will offer a full substitute for conventional fixed broadband services in areas where it has sufficient capacity to do so without materially raising marginal costs.”² In this submission, we confirm that assumption using updated data from T-Mobile on expected in-home broadband traffic.

When conducting our earlier analyses, we did not have sufficiently detailed information regarding New T-Mobile’s plans for in-home broadband services to model explicitly the effects of the traffic generated by these services on the costs and quality of its mobile broadband services. We now have the necessary information regarding New T-Mobile’s in-home broadband service plans for 2021 and 2024, and in this letter, we report the results of accounting for the effects of in-home broadband traffic on our analysis of mobile broadband services. Our central finding is that New T-Mobile’s planned offering of in-home broadband services will not materially affect mobile broadband consumers’ welfare in either 2021 or 2024.³

We conducted our baseline analysis of the effects of in-home broadband traffic as follows. First, T-Mobile personnel provided the number of households projected to subscribe to New T-Mobile’s in-home broadband service in each sector for 2021 and 2024.⁴ Second, we calculated the amount of traffic in each sector based on the projected usage rates in each year.⁵ Third, we

¹ Mark Israel, Michael Katz, and Bryan Keating, “Reply Declaration of Mark Israel, Michael Katz, and Bryan Keating,” September 17, 2018, WT Docket No. 18-197 (hereinafter *IKK Declaration*); Mark Israel, Michael Katz, and Bryan Keating, “Extension of the Israel, Katz, and Keating Analysis to 2019-2020,” February 20, 2019, WT Docket No. 18-197 (hereinafter *IKK Extension*).

² *IKK Declaration*, n. 5 (citing Reply Declaration of G. Michael Sievert, September 17, 2018, ¶ 6).

³ These are the only years for which the necessary detailed information regarding in-home broadband has been made available to us.

⁴ The total number of households across all sectors is [REDACTED] million in 2021 and [REDACTED] million in 2024. (See our backup materials.)

⁵ T-Mobile projects that New T-Mobile’s in-home broadband service usage will average [REDACTED] and [REDACTED] per household per month in 2021 and 2024, respectively. (Declaration of G. Michael

added this in-home traffic to the mobile traffic in each sector,⁶ and re-ran the Network Build Model with this increased traffic.⁷ For each year, we used the Network Build Model to determine the additional capacity solutions (if any) required to handle the combined mobile and in-home broadband traffic relative to New T-Mobile's planned baseline network. These three steps yield projections of New T-Mobile's marginal network costs and sector-level user-experience throughput. Finally, we used these marginal cost and throughput projections in our merger simulation analysis to determine the resulting change in the proposed merger's projected welfare benefits to mobile broadband consumers.

As shown in Table 1 below, in 2021, the addition of in-home broadband traffic to New T-Mobile's network reduces the proposed merger's projected welfare benefits to mobile broadband customers by only 0.6 percent (from \$[REDACTED] to \$[REDACTED] per subscriber per month) in our baseline specification and by similarly small percentages in each of our sensitivity specifications.

Sievert, President and Chief Operating Officer, T-Mobile US, Inc., March 6, 2019 (hereinafter *Sievert Declaration*), ¶ 12 and Exhibit 2.)

⁶ T-Mobile expects the distribution pattern of New T-Mobile's in-home broadband traffic across the day to be the same as the distribution pattern for mobile broadband traffic. (Declaration of Mark McDiarmid, Senior Vice President of Radio Network Engineering and Development, T-Mobile US, Inc., March 6, 2019, n. 4.)

⁷ Specifically, we use the model described in the *IKK Extension*.

The results presented in the text use the level of mobile traffic in the Maintain Case that was defined in our earlier submissions. Results for the Relax Case, which was also defined in our earlier submissions, are similar and included in our backup materials. For descriptions of these mobile traffic scenarios, see *IKK Declaration*, § IV.A.2; *IKK Extension*, n. 33.

Table 1
Change in Consumer Welfare (\$/Subscriber/Month): 2021
(Using the 2021 Planned Baseline Network as the Starting Point)

	Without In-Home Broadband Traffic	With In-Home Broadband Traffic	% Difference
IKK Merger Simulation Model With ABH Diversion Ratios			
<i>ABH Diversion Ratios, -0.3 Industry Elasticity, 75% Wholesale Pass-Through Rate, vGUPPI without Input Substitution, TracFone and Sprint Resellers Whole Price Constraints</i>			
[1.A]			-0.6%
Sensitivities			
<u>Alternative Diversion Ratio Data Sources</u>			
[1.B]			-0.8%
[2]			-0.7%
[3]			-0.5%
[4]			-0.5%
<u>Alternative Industry Elasticity Assumptions</u>			
[5]			-0.6%
[6]			-0.5%
<u>Alternative Vertical Upward Pricing Pressure Pass-Through Rates</u>			
[7]			-0.6%
[8]			-0.6%
[9]			-0.6%
[10]			-0.6%

Notes: Results are for the Adjusted Nevo Model in the Maintain Case using the 2021 New T-Mobile baseline network with site-specific scaling.

These results can be understood as follows. Consistent with T-Mobile’s stated intention to offer in-home broadband service only in areas where New T-Mobile will have sufficient capacity, the addition of the in-home broadband traffic triggers [REDACTED] in the relevant range and, thus, there is [REDACTED] in network marginal costs. However, the addition of the traffic to the network increases network loading and reduces user-experience throughput, which leads to the very small decrease in consumer welfare reported in Table 1.

The same logic applies to 2024 and, thus, the results are similar. As shown in Table 2 below, in 2024, the addition of in-home broadband traffic to New T-Mobile’s network reduces the proposed merger’s projected welfare benefits to mobile broadband customers by only 3.2 percent (from \$ [REDACTED] to \$ [REDACTED] per subscriber per month) in our baseline specification and by similar percentages in each of our sensitivity specifications.

Table 2
Change in Consumer Welfare (\$/Subscriber/Month): 2024
(Using the 2024 Planned Baseline Network as the Starting Point)

		Without In-Home Broadband Traffic	With In-Home Broadband Traffic	% Difference
IKK Merger Simulation Model With ABH Diversion Ratios				
<i>ABH Diversion Ratios, -0.3 Industry Elasticity, 75% Wholesale Pass-Through Rate, vGUPPI without Input Substitution, TracFone and Sprint Resellers Whole Price Constraints</i>				
[1.A]				-3.2%
Sensitivities				
<u>Alternative Diversion Ratio Data Sources</u>				
[1.B]	<i>Harris Mobile Insight Survey</i>			-3.8%
[2]	<i>Sprint Brand IQ Survey</i>			-3.6%
[3]	<i>T-Mobile SoGA and SoDA Estimates</i>			-3.1%
[4]	<i>Proportional to Subscriber Share (Simple Logit)</i>			-3.0%
<u>Alternative Industry Elasticity Assumptions</u>				
[5]	<i>-0.1</i>			-3.4%
[6]	<i>-0.5</i>			-3.0%
<u>Alternative Vertical Upward Pricing Pressure Pass-Through Rates</u>				
[7]	<i>50% Pass-Through of Vertical Upward Pricing Pressure</i>			-3.1%
[8]	<i>100% Pass-Through of Vertical Upward Pricing Pressure</i>			-3.2%
[9]	<u>vGUPPI with Input Substitution</u>			-3.2%
[10]	<i>TracFone-Only Wholesale Price Constraint</i>			-3.2%

Notes: Results are for the Adjusted Nevo Model in the Maintain Case using the 2024 New T-Mobile baseline network with site-specific scaling.

The results reported above utilize New T-Mobile’s planned baseline network in each year as the starting point for the analysis. We also conducted an analysis for 2024 in which we used the approach to modeling marginal costs that we took in the *IKK Declaration* and *IKK Extension*: we used New T-Mobile’s planned baseline network for 2021 as the starting point and relied on the Network Build Model to determine the capacity solutions required to handle the projected traffic in 2024.⁸ Because the Network Build Model prescribes incremental network solutions only to solve congestion and not for non-capacity reasons (e.g., coverage), the resulting network will differ from New T-Mobile’s planned baseline network in 2024, which does reflect objectives beyond capacity considerations.

As shown in Table 3 below, in this case, adding the 2024 in-home broadband traffic increases the proposed merger’s projected welfare benefits to mobile broadband customers by 0.5 percent (the benefits still round to \$[REDACTED] per subscriber per month) in our baseline merger simulation specification (Row 1.A) and by similar percentages in each of our sensitivity specifications. This seemingly counter-intuitive result arises because capacity additions are “lumpy” (i.e., capacity is generally added in discrete increments at the site or sector level). As a result of this lumpiness, in some cases, the increment of capacity selected by the network model to address congestion created by in-home broadband traffic will be sufficient [REDACTED]

⁸ For an explanation of this approach, see *IKK Declaration*, ¶¶ 59-60.

[REDACTED]. Consequently, marginal costs to handle additional mobile broadband traffic [REDACTED] throughputs for mobile customers.

Table 3
Change in Consumer Welfare (\$/Subscriber/Month): 2024
(Using the 2021 Planned Baseline Network as the Starting Point)

	Without In-Home Broadband Traffic	With In-Home Broadband Traffic	% Difference
IKK Merger Simulation Model With ABH Diversion Ratios			
[1.A]	<i>ABH Diversion Ratios, -0.3 Industry Elasticity, 75% Wholesale Pass-Through Rate, vGUPPI without Input Substitution, TracFone and Sprint Resellers Whole Price Constraints</i>		0.5%
Sensitivities			
<u>Alternative Diversion Ratio Data Sources</u>			
[1.B]	<i>Harris Mobile Insight Survey</i>		0.6%
[2]	<i>Sprint Brand IQ Survey</i>		0.6%
[3]	<i>T-Mobile SoGA and SoDA Estimates</i>		0.5%
[4]	<i>Proportional to Subscriber Share (Simple Logit)</i>		0.5%
<u>Alternative Industry Elasticity Assumptions</u>			
[5]	<i>-0.1</i>		0.5%
[6]	<i>-0.5</i>		0.5%
<u>Alternative Vertical Upward Pricing Pressure Pass-Through Rates</u>			
[7]	<i>50% Pass-Through of Vertical Upward Pricing Pressure</i>		0.5%
[8]	<i>100% Pass-Through of Vertical Upward Pricing Pressure</i>		0.5%
[9]	<u>vGUPPI with Input Substitution</u>		0.5%
[10]	<i>TracFone-Only Wholesale Price Constraint</i>		0.5%

Notes: Results are for the Adjusted Nevo Model in the Maintain Case using the 2021 New T-Mobile baseline network with site-specific scaling.

REDACTED – FOR PUBLIC INSPECTION

APPENDIX D

REDACTED – FOR PUBLIC INSPECTION

DECLARATION OF DAVE MAYO

**Senior Vice President of 5G and IoT Business Chief,
T-Mobile US, Inc.**

***HIGHLY CONFIDENTIAL
TEXT HIGHLIGHTED***

DECLARATION OF DAVE MAYO

**Senior Vice President of 5G and IOT Business Chief,
T-Mobile US, Inc.**

1. My name is Dave Mayo, and I am Senior Vice President of 5G and IoT Business Chief at T-Mobile US, Inc. (“T-Mobile”). In this role, I am responsible for the IoT and Fixed Wireless businesses as well as the company’s 5G strategy. I have been employed by T-Mobile and predecessor companies for over 22 years, and until early 2018, I was an executive in the Technology Organization with a variety of business and network development roles. I graduated from the University of Washington with a Bachelor of Art in Business with concentrations in Accounting and Operations and Systems Analysis.

2. This declaration discusses the plans of T-Mobile [REDACTED]
[REDACTED] It also provides a review of the T-Mobile plans for the service. In particular, [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

3. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

4. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]

5. [REDACTED]

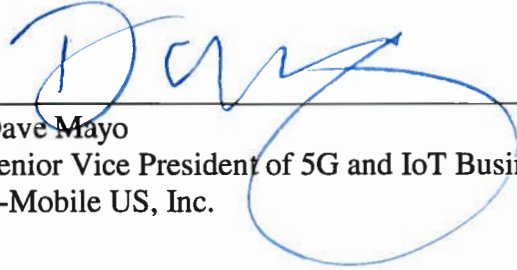
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6. I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed on March 6, 2019.



Dave Mayo
Senior Vice President of 5G and IoT Business Chief
T-Mobile US, Inc.